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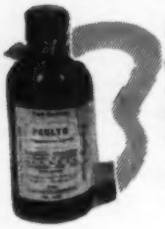

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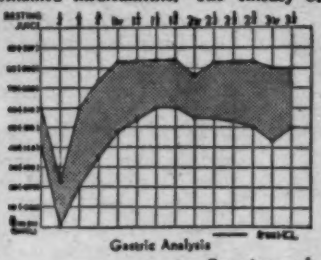

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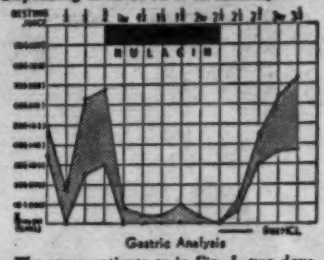

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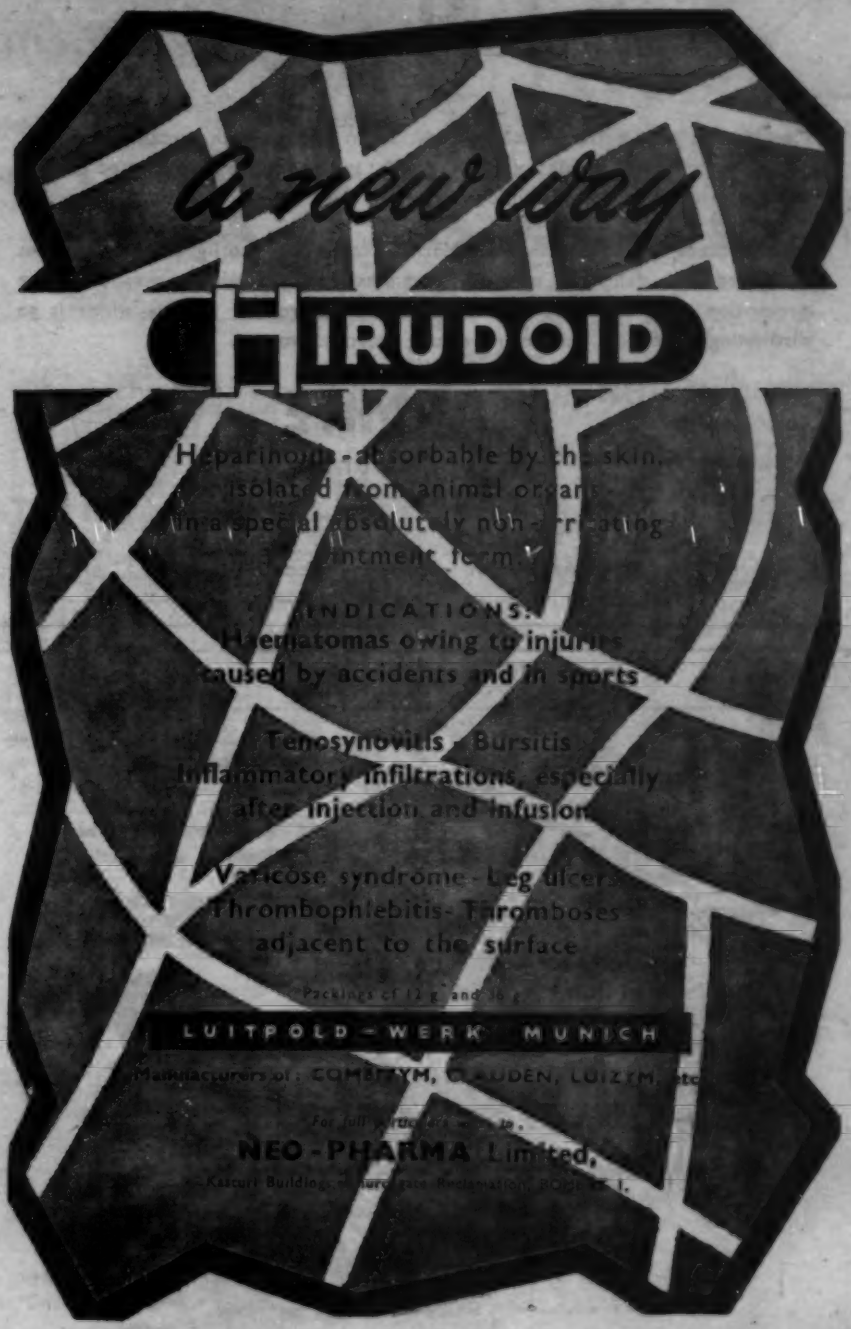
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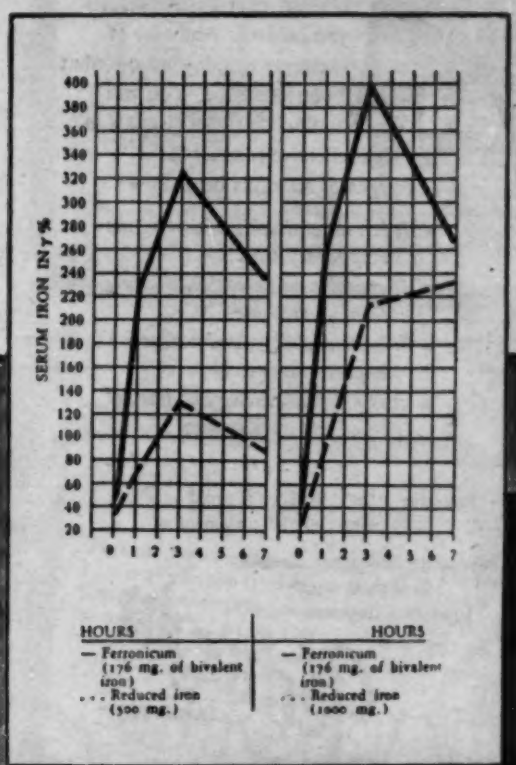

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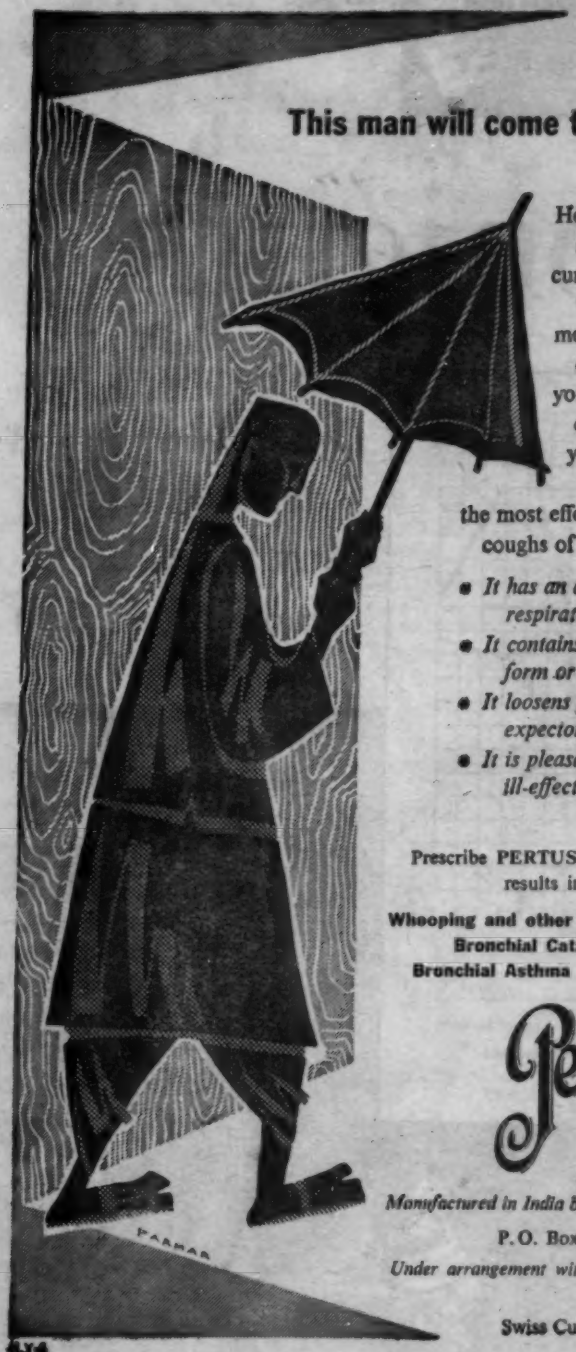

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ORIGINAL ARTICLES

EPIDEMIC DROPSY—NADIAD EPIDEMIC

OBSERVATIONS ON SERUM PROTEINS AND CORTISONE THERAPY

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Introduction

An epidemic disease, previously unknown in Gujarat, struck the town of Nadiad in the last week of June 1953. There was a marked rise in the incidence of the disease during July and a few new cases were reported in August and September. It is estimated that 1,500 cases occurred in a population of 62,000. On clinical manifestations which have been reviewed recently by Patwardhan (1952) the diagnosis of epidemic dropsy was established.

Two incidents of significance occurred in Nadiad prior to the clinical occurrence of the epidemic. Firstly, the Nadiad municipal water supply was reported to be polluted on the 19th of June, after heavy rains. Seconly, the groundnut oil consumed by the people from June 23 to June 27 was later on found to be contaminated with argemone oil. Some cases of diarrhoea occurred on the 23rd of June while the first cases of oedema occurred on about the 27th of June. Since there were two possible causative factors i.e. water pollution and oil contamination, a controversy arose as to their relative importance in the aetiology of the disease.

An individual from Nadiad who was affected with the disease sought admission under the care of one of us (M.J.S.). The case showed two interesting features, not so far recorded in cases of epidemic dropsy. They are (1) a significant rise in the serum alpha-two globulin level and (2) a remarkably good recovery immediately following cortisone therapy.

In order to make further observations samples of blood were obtained from various groups of persons residing in or near Nadiad. These samples were subjected to electrophoretic analysis.

Previous work on serum proteins in epidemic dropsy using a chemical method for separating the fractions showed a reduction in the albumin and a rise in the pseudoglobulin fraction of the globulin (Chopra *et al*, 1935).

Case Report

Mrs. P. K., aged 35 years, a resident of Nadiad, noticed swelling of her legs on 27th June. Two days later, she developed diarrhoea and fever and the skin over the legs became erythematous. Her complaints became progressive for about two weeks. At this time she went to Ahmedabad, where she was admitted as an indoor patient. Her whole family i.e. husband, a son

and a daughter were suffering from similar complaints. During the stay of two months in the hospital, her condition became progressively worse and her son aged 15 died of the disease. She came to Bombay and was first seen on the 27th of August, when a diagnosis of epidemic dropsy was made. By that time her complaints of diarrhoea, fever, oedema and skin trouble had been present for two months. Personal history and account of past illnesses revealed nothing significant.

Physical examination—On physical examination the patient showed fever, pallor, strawberry tongue, engorged neck veins, oedema of legs, erythematous spin on legs and abdomen (Fig. 1A and 1B, *vide* Plate), a nodule of the site of a pin's head next to her left nostril, (Fig. 2, *vide* Plate), ascites, the liver enlarged four fingers, small right sided hydrothorax. The apical impulse was shifted half an inch outside the left midclavicular line. A localised systolic mitral bruit was present. The central nervous system was not affected, sensation was normal, plantar reflex showed flexor response and ankle jerks were normal. The calves were not tender.

Laboratory investigations—Her blood count was 3·4 million red cells, haemoglobin 53 per cent (Hellige) leucocytes 14,400 with neutrophils 72 per cent, lymphocytes 25 per cent, eosinophils 1 per cent and monocytes 2 per cent. Urine showed traces of albumin only. Widal was negative. Stools at first were loose and showed many red cells and a few pus cells.

X-ray of chest showed a small amount of fluid in right pleural space. Electrocardiographic tracings were normal. Her bleeding time was 1 minute and 20 seconds; clotting time was 5 minutes and 39 seconds; prothrombin time was 23 seconds and capillary resistance test was normal. The serum calcium was 8·7 mg. per cent.

Repeated blood cultures and urine cultures showed nothing abnormal. Stool cultures revealed no growth of any pathogenic bacteria. Blood urea was 46 mg. per cent. and non-protein nitrogen 37 mg. per cent. Fractionation of the patient's serum proteins revealed a very low serum albumin level and a markedly elevated alpha-two globulin as shown in Fig. 3 (*vide* Plate) and Table 1.

Progress of the case—The patient was treated by rest in bed. She was put on a high protein diet. For about 2 weeks the patient showed no improvement.

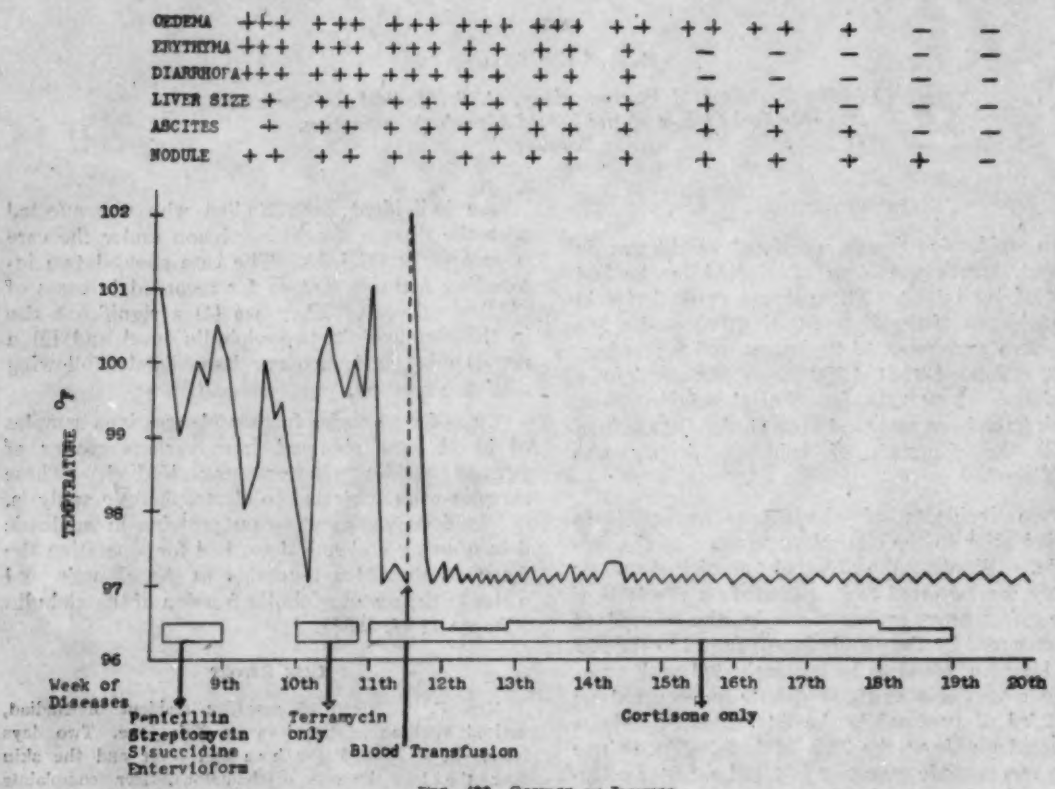
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Fig. 1A—Oedema, erythema and pigmentation of legs (20-9-1953).

Fig 1B—Appearance of legs after two months (18-11-1953).

Fig. 2—Nodule at left nares (20-9-1953).

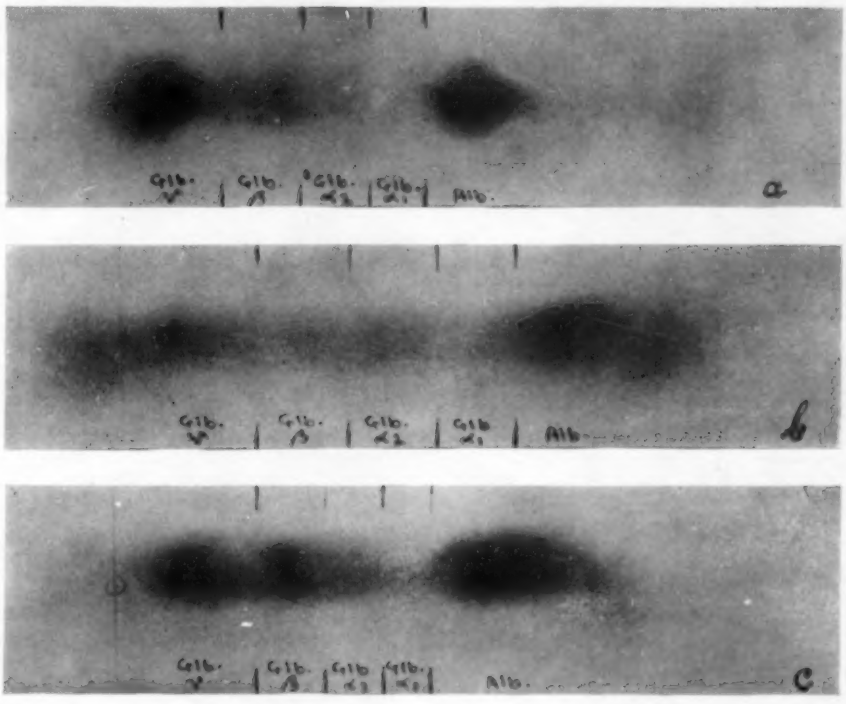

Fig. 3—Plasma proteins fractionation by paper-electrophoresis. *a*—Normal. *b*—A case of Nadiad disease. *c*—Same case after treatment.

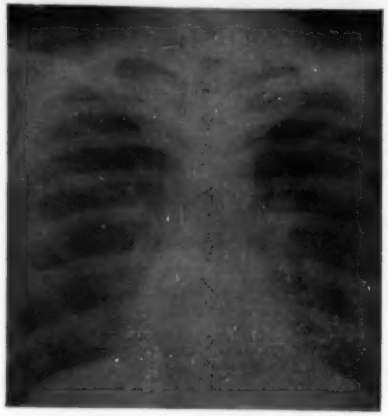

Fig. 1A—Miliary nodules.

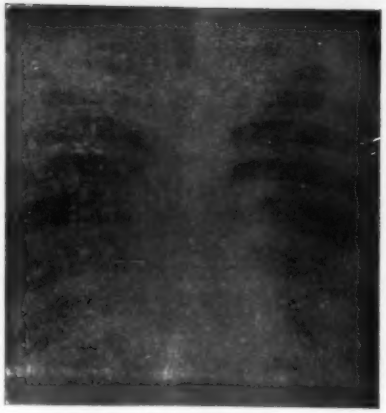

Fig 1B—Resolution.

Fig. 2—Ground glass appearance with miliary shadow.

GANGULY AND PAL—*Early Bagassosis (pp. 253-54).*

Fig. 1.

HASSAN—*Diffuse Lipomatosis (pp. 263-64).*

Fig. 1A—Skiagram three days after first aspiration showing fluid and air in pericardial sac.

Fig. 1B—Skiagram after five months.

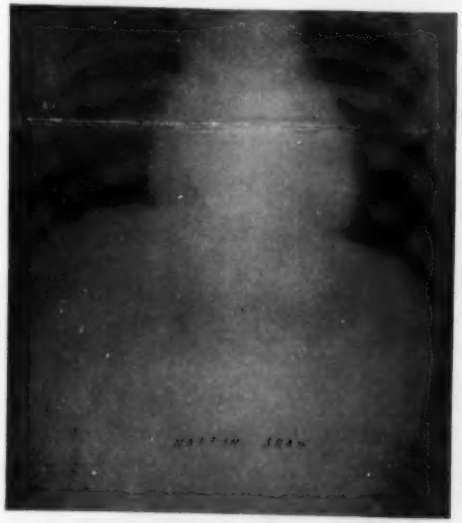

Fig. 1C—Skiagram 21 months after the first picture (Fig. 1A).

BASU RAY—*Purulent Pericarditis Treated with Streptokinase-Streptodornase (pp. 264-65).*

TABLE 1—SHOWING SERUM PROTEIN LEVELS

	Initial test	3 weeks after treatment	9 weeks after treatment	100 Normal Indian subjects
Albumin ...	1·71	3·20	3·55	4·52
Alpha-1 globulin	0·27	0·38	0·35	0·19
Alpha-2 globulin	0·63	0·61	0·60	0·32
Beta globulin ...	0·83	0·82	0·79	0·81
Gamma globulin	1·68	1·79	1·81	1·86
Total ...	5·12	6·80	7·10	7·70

At this phase, the rise of the alpha-two globulin fraction was noted. Because of reports by Dole *et al* (1945 and 1947) and Koiw *et al* (1951) of a rise in alpha-two fraction of globulin in rheumatoid arthritis, rheumatic fever and disseminated lupus erythematosis and because of other analogies to the collagen diseases it was decided to try cortisone therapy.

Cortisone in a daily dosage of 75 mg. (25 mg. T.D.S.) was given from the eleventh of September onwards. The patient's fever became and remained normal from the very next day except for a few hours after a transfusion, (Fig. 4). After a period of three weeks the patient was given 50 mg. of cortisone per day. Since the start of cortisone therapy the patient remained afebrile except after the blood transfusion reaction. Her appetite improved and she had formed stools. Oedema and erythema gradually subsided. She has showed unusually rapid improvement. Even the nodule on her face disappeared. Upon discontinuance of therapy there was no relapse.

SERUM PROTEINS OF NADIAD RESIDENTS

Blood samples were obtained from four different groups of persons resident in Nadiad. Eight cases of epidemic dropsy of which five were active and three convalescent were examined. In addition seven medical students donated blood samples and gave a history of having partaken of the oil contaminated with argemone. These students did not drink water from the public supply and none of them had experienced any symptoms of the epidemic. The serum proteins were estimated by paper electrophoresis using the method described by Koiw *et al* (1951). The results of these determinations are given along with the normal values obtained from 100 medical students living in the Bombay area (Table 2).

The serum protein pattern shows a significant and consistent fall in the serum albumin level and rise in the amount of alpha-two globulin. The lowest level of serum albumin was observed in patients during the active phase of the disease while the highest alpha-two globulin was found in the convalescent cases. The medical students who had partaken of contaminated oil showed similar although less extensive alternations in the serum proteins.

TABLE 2—SERUM PROTEIN PATTERN IN RESIDENTS OF NADIAD

	Normal students (Bombay)	Exposed students (Nadiad)	Active Disease	Convalescent cases
Number	100	7	5	3
Albumin				
Grams ...	4·52	3·88	3·50	3·80
S.D.	0·80	0·33	0·58	0·47
S.E.	0·08	0·13	0·26	0·26
Alpha-1 globulin				
Grams ...	0·19	0·20	0·22	0·27
S.D.	0·08	0·06	0·09	0·04
S.E.	0·01	0·03	0·04	0·03
Alpha-2 globulin				
Grams ...	0·32	0·41	0·43	0·61
S.D.	0·09	0·06	0·08	0·12
S.E.	0·01	0·02	0·03	0·03
Beta globulin				
Grams ...	0·81	0·92	0·80	0·85
S.D.	0·16	0·13	0·39	0·16
S.E.	0·02	0·05	0·17	0·10
Gamma globulin				
Grams ...	1·86	1·70	1·68	1·54
S.D.	0·25	0·28	0·11	0·13
S.E.	0·03	0·10	0·05	0·08

These observations are similar to those made on the patient described in this study. It is interesting to note that the serum albumin level rose at the time of recovery while the alpha-two globulin level remained elevated. Seibert *et al* (1947) have shown that this fraction of the globulins is associated with polysaccharide-proteins.

SUMMARY AND CONCLUSIONS

A brief description is given of an outbreak of epidemic dropsy which occurred in the summer of 1953 in the region of Nadiad. A detailed case report is presented of one individual out of a family which was afflicted and of which one member succumbed. This patient showed a continuous elevation of temperature which did not respond to antibiotic or antiamoebic treatment. She had diarrhoea and erythema of the lower extremities in addition to the usual manifestation of dropsy and developed a small nodule on the face. There was anaemia and moderate leukocytosis. There was elevation of the urea and non-protein nitrogen level of the blood. Serum protein studies revealed

a marked reduction in the albumin fraction and a significant elevation of the alpha-two globulin.

In view of the resemblance of the clinical picture and the serum protein disturbance to that seen in collagen diseases treatment with cortisone was instituted. This was followed by a prompt fall in the temperature and a gradual subsidence of all signs and symptoms including the nodule. There was a rise in the serum albumin level but no change in the alpha-two globulin.

Blood obtained from residents of Nadiad showed similar abnormalities of the protein pattern in active and convalescent cases and also in individuals who had partaken of argemone oil but had not used contaminated water and had never suffered any symptoms of epidemic dropsy.

It is felt that these observations may assist in the diagnosis and treatment of epidemic dropsy and may furnish a clue to the pathogenesis of the disease.

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EPIDEMIC DROPSY IN NADIAD

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Epidemic dropsy has made its appearance for the first time in Gujarat. A detailed account of the cases studied by us is given below :

In June, 1953, an illness characterised by diarrhoea and vomiting, oedema of the legs and thighs, cutaneous flush and cardiovascular involvement broke out at Nadiad, in Bombay Province, assuming epidemic proportions. Nadiad, a town in Gujarat, has a population of 62,700 (Municipal Census, 1951), out of which only about 555 persons were affected (Municipal Survey, 1953). Its onset coincided with early monsoon rains. The latter resulted in gross pollution of the municipal water supply. This pollution of water was, therefore, held responsible for this epidemic. The population of the town consists mostly of Hindus with some Muslims. Diet consists of pulses, bajri, wheat, rice, ghee, ground-nut oil or til oil and vegetables.

A suggestion was made that this may be epidemic haemorrhagic fever, as occurred in United Nations Troops in Korea in the summer and fall of 1951, and reported by Barbero *et al* (1953) and others. This suggestion was examined in detail at a later stage.

From 25th July 1953 to 10th August 1953, ten cases between the ages of 4 and 33 were studied. Out of these 5 were males and 5 females. The disease has shown a striking familial incidence. These ten patients came from four families. In these four families, out of the total number of 24 members, 21 were affected as noted below :

Family No.	No. of Members	No. Affected
I	Six	Four
II	Eight	Seven
III	Three	Three
IV	Seven	Seven

All the affected members of each family were attacked simultaneously. It is significant that family number II was not using municipal water ; the place they were living in, having its own independent water supply. However, the children of this family who were attending school, did drink municipal water during school hours. It was also elicited that several families living in the same streets as our patients had completely escaped. Out of these four families the heads of three were middle class employees, the head of the fourth family was an upper middle class farmer. The onset of the illness was between 10th June 1953 and 6th July 1953. The highest peak was reached in August. The seasonal incidence corresponds to that given by Lal and Das Gupta (1942) for epidemic dropsy.

DATA FROM CLINICAL STUDY

Onset—Where history could be properly elicited, vague aches and pain, weakness, malaise, fatigue and epigastric discomfort were the earliest symptoms noticed by the patients. One patient had general debility for 10 days before more acute symptoms supervened. These prodromal symptoms being of non-specific character, their duration could not be ascertained with precision.

Gastro-intestinal symptoms—Nine patients had diarrhoea, initially. Frequency of stools varying

between 6 to 10 per day. The tenth patient had diarrhoea in the later part of the illness—number of stools being 8 to 10 per day. All patients had abdominal pain and borborygmi. Other symptoms complained of were vomiting in 5 patients, nausea in 5, blood in stools in 3 and mucus and pus in one patient. Duration of the gastro-intestinal symptoms was between 6 to 10 days—the average being 8 days. One patient had diarrhoea with colicky abdominal pain throughout the course of the illness, i.e. nearly two months. The patient who developed diarrhoea in the later part of the illness, also had abdominal pain and passed blood in the stools for 3 days.

Oedema—All patients had oedema which first appeared on the legs. Three patients had in addition oedema of the face and the sacral region. Oedema of the face was most marked in the morning. Out of the five male patients in this series two had oedema of the scrotum. Two patients had ascites and one patient had pleural effusion. Two serious cases which ended fatally developed severe anasarca a day or two before death.

In five patients oedema was noticed on the first day. Out of the remaining five patients three noticed oedema on the third day, one on the seventh day and one on the twelfth day. It increased in the evening in ambulant patients.

Erythema—Erythema, blanching on pressure, was present in all cases. It produced a vivid contrast with the upper unaffected part of the body, which was very pale. It was evident that this erythema was due to extreme degree of cutaneous vasodilatation. Raising of the affected part also reduced the erythema.

Fever—All patients had fever. Two patients had fever for two days at the commencement of the illness, but were afebrile during hospital stay. Two patients had fever for two days only, in the 5th week of the illness. Remaining six patients had irregular intermittent fever throughout their hospital stay. The range of fever varied between 100° and 103°F and was not associated with rigors or perspiration.

Hyperpigmentation—Generalised dark colour of the face and extremities was present in 3 patients. In two of these the pigmentation was so marked that patients themselves drew pointed attention to this sign. Two patients had patchy pigmentation of brown colour on the forehead and cheeks. Remaining five patients had no pigmentation. Similar pigmentation of the face was also noted by Lal and Roy (1939).

Skin lesions—All patients had oval, circular or irregularly shaped depressed areas with dark colour and raised margins, round about the ankle and the knee joint. Their number varied from two to five. One patient had a raised ecchymotic patch on the inner side of the thigh, just above the knee. One patient had stomatitis. Nodular and scaly lesions were not seen.

Cardiovascular system—Eight patients had breathlessness and palpitation. All patients had tachycardia. In five patients the heart was clinically enlarged, and was confirmed by orthodiagram in three, x-ray of the chest in one and screening of the chest in one case. Apical systolic murmur was present in six cases—in one case a systolic thrill was also felt. Pulmonary systolic murmur was present in two cases. Two patients in this series died of acute congestive cardiac failure. Both these patients developed severe cyanosis, precordial pain, severe restlessness and oedema of the face during the last day or two of the illness.

In six cases the liver was enlarged two fingers below the costal margin and tender on pressure. Tenderness in the right hypochondriac area without a palpable liver was present in one case.

One case had an enlarged spleen—2 fingers below the costal margin.

Blood pressure—Systolic, diastolic and the pulse pressures were abnormally labile in seven cases. The highest reading recorded in one patient was 190 mm. Hg. systolic and 110 mm. Hg. diastolic and the lowest in the same patient was 105 mm. Hg. systolic and 65 mm. Hg. diastolic. The fall in diastolic pressures was much more marked than the systolic pressures in all the cases. Abnormally high pulse pressures were thus observed.

Extremely low diastolic pressures were found in the serious cases. Meaker (1950) has reported similar findings.

Respiratory system—Seven patients had cough without expectoration. Three patients had pain in the chest. One patient had blood stained sputum three days before fatal termination. Onset of the respiratory symptoms varied. One patient had cough without expectoration for 10 days at the commencement of the illness. In another case cough with expectoration persisted for one month. In the remaining five cases this symptom developed after the 5th or 6th week of the illness.

Scattered rales and rhonchi at the bases of the lungs were detected in 6. In the seventh patient although unproductive cough was present, no physical signs could be detected in the lungs. Three patients had no symptoms referable to the respiratory system. One patient had pleural effusion.

Eye—One patient had burning of the eyes. No abnormality was seen in the palpebral and bulbar conjunctiva, the sclera and the cornea. Fundoscopic examination was done in 5 cases. One case

had a normal fundus. Four cases showed the following findings:

Case 1.—Patches of retinal haemorrhage in left eye. Tension 18 mm. both eyes.

Case 2—Veins very much dilated, more in the left eye. Tension 20 mm. both eyes.

Case 4—Discs pale and oedematous. Veins much congested. Arteries thin. Patches of dense, thin and flame-shaped haemorrhages. Normal tension in both eyes 18 mm.

Case 7—Right eye: Central retinal vein and the upper retinal vessel show thrombosis. Patches of haemorrhage near the disc.

Left eye: Retinal vein thrombosis —upper and lower temporal vessels including the muscular area. Retinal haemorrhages near the disc.

Cases 4 and 7 both ended fatally. No evidence of glaucoma was seen in any of the cases.

Nervous system—Frontal headache of variable severity was present in 4 cases. Three patients had inability to stand or sit in the dark. One patient had generalised spasms. Burning sensation over the whole body was present in one case. One case had inability to stand or walk. In this case the knee and ankle jerks were absent and the corresponding muscles were flabby. Definite signs of neuritis were present in this case (No. 4) which ended fatally.

Genito-urinary system—One patient had haematuria for three days at the commencement of the illness. The twenty-four hour urinary volume varied between 30 and 50 oz.

Laboratory Data

Blood Examination—Table 1 shows the result of R.B.C., W.B.C. and differential counts, haemoglobin percentage and colour index:

Table 1

Case No.	R.B.C.s in million	Hb. %	C.I.	W.B.C.s	Poly. %	Eosino. %	Mono. %	Lympho. %
1.	2·76	52	0·9	5200	72	nil	2	26
2.	2·89	48	0·8	9400	60	1	3	36
3.	3·75	50	0·6	8500	68	2	6	24
D 4.	1·91	22	0·5	10700	74	nil	2	24
5.	2·66	30	0·6	5800	45	4	6	45
6.	1·82	32	0·9	6300	66	8	10	16
D 7.	1·68	26	0·7	3000	66	3	nil	31
					59	1	8	32
8.	1·80	34	0·9	5200	46	5	5	44
9.	Not done	--	—	—	—	—	—	—
10.	2·74	45	0·8	7000	60	12	6	22

Erythrocyte Sedimentation Rate (Westergren) was done in six cases and was found to be markedly elevated in all cases:—

Case 5	...	38 mm.	One hour.
Case 6	...	87 mm.	,, ,,
Case 7	...	105 mm.	,, ,,
Case 8	...	68 mm.	,, ,,
Case 9	...	74 mm.	,, ,,
Case 10	...	83 mm.	,, ,,

All the patients had anaemia. It was either of the hypochromic microcytic or normocytic type as noted by Sen Gupta and Napier (1940). The anaemia varied with the severity of the disease. In the two serious cases which ended fatally (Case 4 and Case 7) the haemoglobin level went down to 22 per cent and 26 per cent and the red-blood cells went down to 1·68 mill. and 1·91 mill. per c.mm. respectively. White blood cell count except in two cases (Cases 4 and 7) was within normal limits. One patient had leucopenia. The differential white blood cell count showed slight diminution in the number of polymorphonuclears in two cases (45 per cent and 46 per cent), an increase in lymphocytes in two cases (45 per cent and 44 per cent) and some increase in monocytes (10 per cent) in one case and eosinophils (8 per cent and 12 per cent) in two cases. Rise in E.S.R. was maximum in Case 7 which terminated fatally. Similar findings have been reported by Pasricha *et al* (1939). Raised E.S.R. has been also reported by them in unaffected persons who had presumably partaken of the same diet. This they have designated as 'pre-epidemic dropsy phase'.

It will appear from Table 2 that the blood uric acid level was slightly on the higher side of normal.

Table 2—Showing Biochemical Findings

Investigation	Case No. 1	2	3	7	10
Blood uric acid (mg. per cent) ...	4·2	3·8	3·9	3·7	4·4
Blood potassium (mg. per cent) ...	...	...	...	21	19
Blood urea (mg. per cent) ...	...	...	...	38	36
Blood sugar (mg. per cent) ...	...	...	...	111	106
Plasma proteins (g. per cent) ...	...	...	5·8	5·14	6·15
Albumin (g. per cent) ...	...	...	...	3·31	3·61
Globulin (g. per cent) ...	...	...	...	1·83	2·54

Routine urine examination in 10 cases was completely normal in 7 cases. There were traces

of albumin in 2 cases and occasional R.B.C. and pus cell in 3.

Routine stool examination in 9 cases showed presence of stray pus cells in 7 cases, stray R.B.Cs. in 3 cases, cysts of *Giardia lamblia* in 4 cases and Trichomonas in 2 cases.

Cultural examination of blood (6 cases), urine (9 cases) and stools (3 cases), failed to reveal any pathogenic organism.

E.C.G.—The summary of electrocardiographic findings in 8 cases of epidemic dropsy is as follows:

Rate—Sinus tachycardia, rate between 90 and 150 p.m. All cases. Rhythm—Regular in all cases. Voltage—Good in 5 cases. Low voltage in 2 cases. High voltage one case. P waves—Normal upright in all cases. P-R interval—Within normal limits. QRS complex—Duration 0·04 seconds. Slurring QRS complex in one case. No abnormal Q waves in any. S-T segment—Elevation of S-T segments in V leads in two cases. Depression of S-T segment in one case and low take off in three cases. Normal in two cases. T waves—Tall and more than 5 m.v. in one case in limb and V leads. Tall T wave in V_4 in one case. Biphasic T waves in limb and precordial leads in one case.

Short P-R interval, abnormality in the height of the P waves, extra-systole and auricular fibrillation have been described by Chopra *et al* (1937). These changes were absent in our cases. Inverted T waves and S-T segment displacements of minor degree indicating coronary insufficiency were present in 4 cases. Signs of involvement of the heart were present in 5 cases—clinically. One can conclude, therefore, that even though evidence of functional derangement of the heart is present in serious cases (6 in the series), there are no characteristic electrocardiographic abnormalities in epidemic dropsy.

Discussion

As already stated the epidemic started at the beginning of the monsoon, when the water supply was grossly contaminated. It was natural, therefore, that locally the disease was attributed to water pollution. However, there were certain features which clearly showed that one had to look for the causative agent elsewhere. For example certain areas in the city where the water supply was the same escaped nearly completely. There were very few cases amongst Muslims and none amongst the refugees. Cases were reported from two surrounding villages where the question of using Nadiad Municipal water could not arise. In the town itself cases occurred where the water used was from a different source. Finally it was most unlikely that a water-borne disease would affect less than one per cent of the total population of the town. These facts rendered the water pollution theory untenable.

Before labelling the syndrome as a new clinical entity, certain well recognised diseases possessing similar clinical features had to be excluded. These were: (1) beriberi, (2) starvation oedema, (3) filariasis, (4) epidemic haemorrhagic fever, (5) epidemic dropsy.

Beriberi could easily be excluded because of absence of well marked neurological signs, presence of characteristic cutaneous flush, blanching on pressure, and failure to respond to the administration of large doses of aneurin.

Starvation oedema was excluded because the aetiological factor was not there, as the cases occurred amongst the well-to-do and middle class families and not amongst the poor.

Filariasis was excluded because none of the specimens of blood showed microfilariae. Clinically also there was not much resemblance.

Epidemic haemorrhagic fever, a new clinical entity was reported from Korea by Barbero *et al* (1953) and others. It was first mistaken for Leptospirosis. The disease was characterised by acute onset of fever with headache, chill, malaise, anorexia, myalgia and arthralgia. Gastro-intestinal symptoms except anorexia and vomiting were absent. Initial high fever persisted for about two weeks and then came down gradually, to be followed by a secondary rise of milder degree and shorter duration. Cutaneous flush of the face, neck and the upper chest and severe vascular injection of the conjunctiva, oral, pharyngeal and nasal mucous membrane, were prominent features. There was a tendency to bleed from various sources such as epistaxis, haemoptysis, haematemesis, ecchymosis, petechiae, and subconjunctival haemorrhage, with occasional bleeding in the C.S.F. Generalised lymphadenopathy and abdominal tenderness were often present. Oliguria was present in early stages to be followed by diuresis as the patients improved. The kidneys were affected in all cases with increased specific gravity of the urine, constant albuminuria and casts of various types. By the third or fourth week most of the symptoms and signs subsided and in the next few weeks the patient became normal. There was no residual damage or incapacitation.

In the Nadiad epidemic the onset was with gastro-intestinal disturbance particularly vomiting and diarrhoea. This was followed by oedema and cutaneous flush of the lower extremities. The oedema tended to increase in the evening in ambu-

lant patients. Skin lesions and irregularly intermittent fever were present in many patients. The heart was affected in all the severe cases, shown clinically by enlargement, mitral and pulmonary systolic murmurs and enlargement and tenderness of the liver. In the Korean fever, clinical and electrocardiographic evidence of damage to the heart was absent. Even in severe cases where there were signs of considerable cardiac involvement, there was no evidence of any damage to the kidneys. The only urinary abnormality present in a small proportion of Nadiad cases was a trace of albumin in the urine and an occasional red blood cell. In the Nadiad cases the cause of death was acute congestive cardiac and also peripheral failure. Considering all these points it was clearly not an epidemic of haemorrhagic fever.

After excluding all the above diseases, on the basis of the clinical and laboratory data presented here, the Nadiad syndrome was diagnosed as epidemic dropsy. Since it is now established that epidemic dropsy is primarily, argemone oil poisoning and since the Gujarati diet contains very insignificant amounts of mustard oil, it was necessary to look for the presence of some product of argemone seeds in other food stuffs consumed by the affected persons, as suggested by Chaudhuri and Chakravarty (1950). Accordingly samples of til oil and groundnut oil obtained from the affected families and from the local oil mills were tested for the presence of argemone oil. The same was detected in many of these samples by the hospital biochemist as well as elsewhere (Dikshit, 1953); Sathe, 1953; Patel, 1953). Later on big stocks of argemone seeds and oil were detected in the oil mills in Nadiad and the surrounding area.

"In spite of all the evidence presented here, it remains to be explained why the number of cases was so small, when it seems probable that a large number of persons must have consumed the contaminated oil produced by the mills and sold by the vendors" (Lal, 1951). Although huge quantities of argemone oil and seeds were seized by the public health authorities after the diagnosis was definitely established, less than one per cent of the total population of the town developed the disease. This may be due as suggested by Lal (*loc. cit.*) to the fact that the "oil supply to the consumer may not always be from the same source (mill or vendor) and also that the quantity of contaminated oil may not be adequate to produce the disease. This may be the reason why the poorer sections of the population escaped completely." Further it appears to us that the quantity of oil consumed in a raw state is more liable to produce symptoms than the oil used in cooking, as the latter is likely to be partially detoxicated as found by Chopra *et al* (1939). They found that heating the contaminated oil at 240°C for fifteen minutes detoxicates it completely.

The samples of rice collected from the affected families were found to be infected with a mould probably due to excessive heat and humidity in the month of June. Cullinan *et al* (1946) have shown that 67·5 per cent of the aneurin content of mould infected rice is lost when cooked for twenty minutes, as against thirty per cent loss in uncontaminated rice. It appears possible, therefore, that the mould contaminated rice might have been a contributory factor in the production of the cardiovascular symptoms in the Nadiad epidemic—leading to a relative aneurin deficiency. Elevated arterial blood pressures have been reported in cardiovascular beriberi by a number of workers (Weiss and Wilkins, 1937; Cruickshank, 1946; Walters and Smith, 1952 and Walters, 1953). Arterial hypertension was present in three patients of this series—in one the levels being 190 mm. Hg. systolic and 110 mm. Hg. diastolic. According to Sarkar (1948) the mechanism of the production of symptoms in epidemic dropsy is similar to that of aneurin deficiency. Sanguinarine, the active principle of argemone oil, believed by him to be responsible for the production of symptoms in epidemic dropsy, interferes with carbohydrate metabolism at the pyruvic acid stage leading to its accumulation in the tissues. Sanguinarine toxicity, however, differs from aneurin deficiency, in that it blocks the sulphydryl radical of a main enzyme system, thus rendering the therapeutic administration of aneurin ineffective. Wilson and Ghosh (1937) have shown that the bisulphide binding power of the blood of epidemic dropsy patients is increased. They, however, could not say whether it was due to pyruvic acid, methyl-glyoxal or some other substance. Blood pyruvic acid levels were not determined in our cases. Further work along this line appears to be necessary.

Summary

An outbreak of epidemic dropsy in Nadiad, the first of its kind in Gujarat, is reported. A study of 10 cases is given. Argemone oil was detected in samples of edible oils collected from the affected families and the oil mills. It is suggested that consumption of argemone contaminated oil was the primary factor which determined the development of the disease. Though the contaminated oil seems to have been used by a large number of people, the incidence of the disease was comparatively small.

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EARLY BAGASSOSIS

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Bagassosis is an industrial disease of the lung caused by inhalation of 'bagasse' dust. Bagasse is the waste product of sugar cane after the extraction of sugar, and it is being extensively used even in India as a raw material for manufacturing paper, card board etc. Bagassosis as a disease entity was first published by Castleden and Hamilton-Paterson (1943) and also by Sodeman and Pullen (1943). The disease has been elaborately described by Hunter and Perry (1946).

The disease manifests itself as an acute allergic response due to sensitisation of the individual (working in a bagasse factory) to bagasse dust which probably contains a protein moiety that acts as an antigen. In association with allergy there is superadded bacterial infection causing acute diffuse bronchiolitis. This is the acute phase of the disease. Fever, cough with sticky expectoration and breathlessness are the main symptoms of the disease in the acute stage. If treated early there is resolution of the acute inflammatory condition of the lung. When left untreated there is fibrosis, emphysema and bronchiectasis. This is the chronic phase of the disease.

The importance of bagassosis is increasing now-a-days in India also due to rapid increase in the use of bagasse in industry. Recently three cases of bagassosis have been detected by us, when one of our hospital employees brought his brother working in a paper mill for our opinion as to the cause of his haemoptysis and breathlessness. Subsequently two more friends of the same patient and working in the same mill also came to us complaining of the same symptoms. On eliciting the history it was revealed that the particular paper mill was using bagasse as a raw material. This fact attracted our attention to fully investigate the three cases.

CASE REPORTS

Case 1—S.L., male, aged 30 years, working in the laboratory which was very close to the bagasse plant of the paper mill, complained of breathlessness and haemoptysis, cough with sticky sputum but no fever. On examination rales and rhonchi were found in both the lungs. Heart—normal. Blood examination showed slight leucocytosis. Repeated examination of the sputum did not show any acid-fast bacilli. Skiagram showed very fine mottlings in both the lungs. He was diagnosed as a case of bagassosis and was advised complete rest away from the possibilities of further inhalation of bagasse dust. On this treatment alone all his symptoms disappeared and his general health improved after two months. He was last seen three months after treatment when he had no complaints.

Case 2—S.P.G., male, aged 30 years, working in an atmosphere full of bagasse dust for several months, complained of malaise, slow fever, cough with sticky expectoration and breathlessness. Gradually breathlessness increased and he had haemoptysis in small amounts twice within one month. On examination rales and rhonchi were found all over both lungs. Heart—N.A.D. Skiagram on 26-2-53 showed miliary nodules (Fig. 1A, *vide* Plate).

specially marked in the middle and lower zones. Blood picture was more or less normal and no A.F.B. could be found on repeated examination of the sputum. He was advised complete rest and injection of diethylaminoethyl ester hydriodide of penicillin 2·5 lac units twice daily for 10 days. He improved after 15 days' treatment. He was advised not to work in the bagasse plant any more. Contrary to our advice he joined the same factory and within a few days again reported to us with acute dyspnoea and cough. He was given the same treatment after which he changed his occupation away from bagasse dust. He was seen again after about 6 months when he was found free of all the symptoms, and the skiagram on 12-1-54 showed resolution (Fig. 1B, *vide* Plate) of all the nodules with prominent bronchovascular markings.

Case 3—N.S., male, aged 22 years, another employee of the same bagasse plant came to us with almost similar symptoms as in Case 2. The skiagram of the chest on 12-1-54 showed ground glass appearance of both lung fields, miliary shadow and associated emphysema (Fig. 2, *vide* Plate). Right hilar shadow was exaggerated. Blood examination showed leucocytosis. Sputum examination did not show any acid-fast bacilli. He was given the same treatment as Case 2. He was seen much improved after 3 months and the skiagram showed resolution of the previous lesions.

Discussion

The cardinal features of all the 3 cases were dyspnoea and haemoptysis. Haemoptysis is not a very common symptom of bagassosis. But our three cases came for advice because of having haemoptysis. Cases with haemoptysis have also been reported by Perry (1952).

All the cases were advised complete rest away from the possibilities of inhalation of bagasse dust. Case 1 improved on this treatment alone. Cases 2 and 3 were given in addition injection of diethylaminoethyl ester hydriodide of penicillin to control the inflammatory condition of the lungs. Once a patient is sensitised by bagasse he should be advised to change his occupation to prevent relapse. Case 2 relapsed because he again exposed himself to bagasse, but ultimately he improved when he changed his occupation. All the patients were seen 3-6 months after treatment when they were found free of all symptoms and the skiagrams of Case 2 and Case 3 showed complete resolution. They were advised to report if relapse occurs. None of them has yet reported.

Bagassosis is a very serious condition, but if diagnosed early and treatment given as outlined above, complete cure is possible. Repeated attacks or if not treated early will result in fibrosis, emphysema and bronchiectasis thus causing a great disability. Once sensitised the victim should be provided with a job elsewhere or *suitably compensated.*

It may not be out of place to mention here that though this Tuberculosis Hospital is situated very near the jute mill area, seldom a jute mill worker presented himself with lung symptoms caused by inhalation of jute dust, but a large number of such workers suffering from pulmonary tuberculosis apply for admission.

Summary

Three cases of bagassosis are reported for the first time in India.

The main symptoms of the disease are dyspnoea, haemoptysis, fever, cough with sticky expectoration.

Complete rest and injection of 2,50,000 units of penicillin ester B.D. for 10 days have been found to control the symptoms.

To prevent relapse the patient should be advised not to work in any factory which deals with bagasse as a raw material.

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REFRESHER COURSE

AMOEBIASIS AND ITS MANAGEMENT

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The term amoebiasis includes all conditions produced in man caused by the invasion of tissues by the pathogenic amoeba known as *Endamoeba histolytica.*

Incidence and Symptomatology

It is a disease which is prevalent all over the tropics. In India the disease is very common

among all the bowel diseases in the country. It is one of the commonest diseases met with both in general and hospital practice. It is because the disease is so protean in nature and so very varied in its clinical manifestations that it may sometimes be missed unless its presence is constantly kept in view. The symptoms vary from those of mild gastrointestinal disturbances like mild indigestion, dyspepsia, vague pains in the abdomen etc., to the most severe type of dysentery in which the patient is completely prostrated and seriously ill. Fortunately the acute dysenteric picture form only a small percentage. A large proportion of the amoebiasis cases suffers from low grade general symptoms of tiredness, asthenia, loss of appetite, headache, backache and neurasthenia. Sometimes the cases simulate chronic cholecystitis or appendicitis or a chronic peptic ulcer. Sometimes the cases are wrongly diagnosed as regional ileitis, or carcinoma of the colon. Besides these there is a fairly large proportion of cases which are only suffering from long continued chronic ill health with perhaps vague abdominal symptoms. Intestinal amoebiasis cases with their bizarre clinical picture thus form the large bulk of amoebiasis cases. Concurrent with or subsequent to some of the above manifestations of intestinal amoebiasis there may be cases of extra-intestinal amoebiasis. In this category the most common manifestation is amoebic hepatitis or a liver abscess. Metastatic abscess of the brain, spleen, lung and kidney have also been described but they are rare. Pulmonary amoebiasis due to extension of the disease from the liver is more common. Perforation of the liver abscess in one of the adjacent organs may lead to serious complications. Obviously extra-intestinal amoebiasis with its varied clinical picture may be a serious matter and may call upon surgical intervention.

Mode of Infection and Pathology

The disease is transmitted by contaminated water and infected foods. The mature cysts of *E. histolytica* form the infective stage of the disease. It is only when such cysts are swallowed that a person may get infected. The active forms of *E. histolytica* are not infective as these are destroyed by the normal acid contents of the stomach.

The favourite site of localisation is the large bowel from caecum to rectum with special predilection for pendant portions where stasis and trauma to the mucosa are most likely to occur. The earliest lesion is superficial erosion with patchy low grade chronic inflammatory reaction involving dilated cystic solitary glands of Lieberkuhn. The lesions then progress from superficial erosions to pinpoint flask shaped ulcers and later on adjacent ulcers may coalesce forming big ulcers causing sloughing. The trophozoites of *E. histolytica* may enter the portal vessels and thus reach the liver. The ulcers in the colon may be secondarily infected with the various types of secondary bacteria, and they in their own turn produce symptoms of toxaemia and chronic invalidism. It is perhaps the presence of these bacterial associates that makes this disease so persistent and chronic in its nature. It is now, however, proved beyond doubt that in all chronic cases the secondary organisms have to be dealt with and eradicated first before giving a regular antiamoebic treatment.

Management

Prevention :

In the management and treatment of amoebiasis prevention of the disease and particularly avoidance of reinfection of the patients is of prime importance. One of the prophylactic measures will, therefore, be to make provision for safe drinking water. Ordinary chlorination sufficient to kill other bacteria, may not suffice to kill this parasite and thus it may be advisable to drink boiled water. Protection of eatables from flies and other sources of contamination should be ensured. When human excreta are used as manure, the vegetables should be thoroughly washed before being eaten raw. Carriers or cyst passers should not be employed in jobs where they have to handle food or drink. They should be properly treated before being employed. Management of amoebiasis is thus largely a problem of preventive or social medicine.

Treatment :

Amoebicidal Drugs—The actual treatment of amoebiasis is not a straight forward matter. There appear to be several reasons for this. Firstly no ideal amoebicidal drug which may be effective in all the stages of the disease has yet been found. Secondly those amoebicides which are most effective for treatment of intestinal amoebiasis are not so good or in fact useless against hepatic amoebiasis and those medicines which are effective against hepatic amoebiasis are generally not useful against intestinal amoebiasis. Thirdly there is a fair degree of relapse rate in this disease even when the disease is treated with the best amoebicidal drug. Fourthly the amoebicidal drugs do not act so effectively in the presence of secondary bacterial organisms and thus in the treatment of such cases the secondary infection has to be tackled first.

There are many effective antiamoebic drugs and these are classified as under:

1. The plant alkaloids—emetine and conessine (Kurchi).
2. Iodohydroxyquinoline—chiniofon.
3. Arsenical compounds—carbarsone, acetarsol.
4. Antibiotics—aureomycin, erythromycin, oxytetracycline.
5. Iodochlorhydroxyquin—chloroquin.

Among all these medicines emetine hydrochloride is still the most useful antiamoebic drug both in intestinal and extra-intestinal amoebiasis. It acts promptly. Kurchi is less toxic but not so effective. Drugs of iodohydroxyquinoline group and arsenicals like carbarsone are also very useful in intestinal amoebiasis. Arsenicals may produce toxic symptoms in sensitive persons. Antibiotics like aureomycin and oxytetracyline are not so useful as amoebicidal drugs but effective perhaps due to the antibiotic action on secondary organisms. Chloroquin is an effective antiamoebic drug in hepatic amoebiasis.

In the treatment of amoebiasis the use of two or three amoebicidal drugs used one after the other or in combination is definitely more effective than the use of one single drug. In a large number of cases the following course has been found to be very beneficial.

First a short course of penicillin 200,000 units, twice daily for three to five days is given. Penicillin is effective in a large number of cases for attacking the secondary bacterial associates which are largely gram-positive organisms. A short course of emetine hydrochloride grain 1 a day for 4 to 6 days is given after the penicillin course and this is followed by a course of carbarsone one capsule of 0·25 g. twice a day after meals for ten days. In a large majority of cases the symptoms are relieved by the above mentioned course but in some cases one of the drugs of iodohydroxyquinoline group may have to be given (2 tablets twice to thrice daily for 7 to 10 days).

With such a course the relapse rate is small and the patients show a steady improvement provided there is no reinfection of the disease.

Diet—The digestion of chronic amoebiasis cases is generally poor and a proper diet which is nutritious and easily assimilable is of great importance in these cases. The diet should generally be a low residue diet. Eggs and meat are permitted, vegetables and fruits with their skins peeled off and which do not have too much of roughage are permitted, fatty and highly spiced food is not permitted and sweetmeats and pastries are also not well tolerated. There is always an associated deficiency of vitamins specially vitamin B and hence a good multivitamin preparation and specially a B complex preparation is useful in these patients.

Symptomatic treatment—For poor digestion and anorexia: Some acid and pepsin mixture after meals or one of the proprietary medicines containing the enzymes of pepsin, papain, diastase etc., may be used.

Constipation—Mild laxatives like pulv. glycyrrhiza drachms two at bed time. Routine use of saline purgative is to be avoided. In some cases ispaghul husk two teasponfuls at bed time with a cup of milk acts as a good laxative.

Anaemia—Must be properly treated.

Abdominal colicky pains are relieved by antispasmodics like belladonna or atropine sulphate.

Insomnia—Some barbiturate preparation may be used at night time for 2 or 3 days to break the vicious cycle.

When blood and mucus in stools are persistent inspite of full treatment, a course of retention enema of chiniofonsodium 1·5 g. dissolved in 7 ounces of water, is useful. The enema must be retained by the patient for at least 2 to 6 hours. A preliminary rectal wash by 2½ per cent sodi bicarb solution is advocated.

Hepatic and Extra-Intestinal Amoebiasis

Emetine hydrochloride is the most useful drug given by intramuscular injection of grain 1 a day for 6 to 12 days. The course may be repeated again after an interval of 3 to 4 weeks.

The patient is instructed to rest in bed while on emetine therapy and if symptoms of neuritis or cardiac damage appear the drug should be discontinued. It is advisable to give vitamin B_1 and B complex to these patients in addition. Since extra-intestinal amoebiasis is secondary to intestinal amoebiasis, emetine therapy must be supplemented by oral administration of some other antiamoebic drugs.

Chloroquindiphosphate—It is useful for extra-intestinal amoebiasis and hepatic amoebiasis. In some cases these drugs are found to be more effective than emetine for hepatic amoebiasis. Dose being 0·3 g. 3 to 4 times a day for 5 to 6 days and afterwards 0·3 g. 2 to 3 times a day for the next 6 to 7 days and later 0·3 g. twice a day for the next week, duration of treatment being 21 days.

ALLERGY

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Allergic conditions are extremely common now a days and comprise a wide range of manifestations. The term was first used by von Pirquet to describe a state of altered reaction to foreign protein. His original description of it was in connection with the differences between the first and the second inoculations with cow pox ; but later on he used it to the state in man in which horse-serum, injected in large doses, causes a train of symptoms within a few days.

In order to understand the real meaning and the significance of the term 'allergy' it is necessary to know certain terms ; and these are 'antigen' which is a foreign substance usually of a protein nature, the introduction of which into the circulation gives rise to allergy. 'Antibodies' are substances which occur in the body as the result of the introduction of an antigen. 'Hypersensitiveness' has practically the same meaning as allergy. Both in animals and in men, hypersensitivity to a protein may be induced by the injection of a solution of that protein ; on re-injection of the same protein, symptoms are produced which did not occur as a result of the first injection. Is then anaphylaxis the same thing as allergy? Anaphylaxis is an artificially produced state of hypersensitivity to proteins, whereas the allergic state is a naturally acquired one. However one may try to distinguish between them fundamentally they are similar.

Such reaction of natural sensitiveness in man was first described by Bostock (1819), who ascribed the summer catarrh in England to new hay. Blackley (1873) described his own summer catarrh to the pollens of grasses ; and he succeeded to prove it by skin test upon himself. There was nothing much heard about it until 1894, until the introduction of diphtheria antitoxin, which was found to alter the constitution in such a manner that a second injection after an interval caused severe symptoms and even death. The brilliant researches of Flexner (1894), Richet (1898), Arthus (1903), Otto (1906), von Pirquet (1906), Noon (1911), Schloss (1912) and finally Dale and Laidlaw put the subject on a sound basis of scientific studies. 'Anaphylaxis' is an older term used by Richet (1898) while the term 'allergie' was used, as said above, by von Pirquet (1906) for exactly the same phenomenon.

Heredity plays a most important part in the causation of allergy. There is no doubt that allergy is familial, but the form of its manifestation may be different in individual members of the same family. Members of certain families have the peculiarity to become sensitised ; but the exact factor which is responsible is not yet known. Even in such a family the response to antigen varies i.e. the same antigen does not produce the sensitisation in all the members of the family. The mother may be sensitive to certain protein ; but the child may be so to quite another. The only common thing is that they are susceptible to sensitisation to one or the other kind of protein. The manifestation of such allergy may be of different forms and the same individual may react to different proteins at different age periods. As an infant or child one may be sensitive to food allergy and in early adult life the same individual may be sensitive to some inhalant such as pollen and dust and in later life to bacterial products.

It is believed that the allergic subjects are physically and mentally active ; they are easily exhausted ; they worry over trifles ; they are above the average in intelligence and have a fluid temperament.

Attempts have been made from time to time to determine the biochemical changes in a state of allergy. All antigens are either proteins or proteins in loose chemical combination. In protein metabolism the protein is broken down to amino-acids and then absorbed from the digestive tract and pass through the liver where they are either completely broken down or resynthesised into proteins. Apply this principle to the mechanism which comes into play to break such proteins down to amino-acids, when such proteins are injected directly into the circulation without pre-digestion. This is done by the fact that the cells develop antibodies which are specific for each individual protein. The individual becomes sensitised when such antibodies develop in his cells. When such sensitisation exists a reaction develops when the appropriate antigen is brought in contact with these specific antibodies. This antibody antigen reaction in the tissues releases a histamine-like substance which has a characteristic action on tissues. This reaction may take place in any tissue, skin, subcutaneous tissue, synovial membrane, mucous membrane or bronchial muscle. It is on the tissue in which the antibodies are situated that symptoms due to antibody-antigen reaction depend. Besides the tissues antibodies are also found free in blood serum of sensitised persons ; and this can be tested by Prausnitz-Küstner reaction.

The antibody-antigen reaction on the skin is characterised by a local dilatation of the minute vessels giving rise to a red or white line, increased permeability of the vessel wall giving rise to a wheal, and a dilatation of the arterioles giving rise to a flare—the 'triple response' of Lewis. Besides these the liberated histamine has a marked action on unstriped muscle, causing it to contract. It also causes spasm of the walls of the larger blood-vessels, so that there is constriction of the arteries, and dilatation of the capillaries with escape of fluid. During an allergic state there occurs hypochlorhydria and this is a factor in allergy. Similarly low blood sugar level is fairly common in allergic states. The glycogen store in the liver is of special importance. The amino-acid contents of blood is increased in acute allergic states, from a normal level of 4·0-6·5 mg. per cent to 7-8 mg. per cent. There is also increased output of amino-acids in the urine, perhaps due to increased tissue destruction. Water retention during acute state is characteristic of most forms of allergy and may be due to diminished bicarbonate reserve in blood. There is also increased eosinophilia in the blood.

Diagnosis

A careful history is of paramount importance. So also the family history to know if allergy runs in the family. A childhood history may sometimes give invaluable data for the determination of the offending agents; although it must be remembered, that the same individual may not remain susceptible to the same allergen from infancy to adult life. In infancy the most common form of sensitisation is to foods, and specially milk; in childhood it is also food, but may be inhalants too; in early adult life inhalants become increasingly more important; and in the middle age bacterial allergy plays the more important role. Different forms of allergic manifestations may be due to different kinds of offending proteins. For example in prurigo, urticaria and angioneurotic oedema the offending agent is very often food; whereas in hay fever and spasmodic rhinorrhoea the causal factor may be found among inhalants. Occupation of the patient is an important diagnostic point. Sneezing and spasmodic rhinorrhoea may follow immediately after making bed, dusting the furniture or sweeping the rooms. There are so many occupations and so numerous the allergens that a complete elimination of the offending agent is almost impossible.

The allergens are varied and innumerable. They may be classified as inhalants, foods, drugs such as aspirin, iodine; infectious agents; physical agents such as heat, cold; substances coming in contact with skin; and even mental—as an emotional stimulus may act as an allergen. There is such a thing called 'summation of stimuli' described by Coke, by which he means that where five existing factors may be sufficient to cause attacks, two of them alone may not be sufficient. This is an important fact and is often overlooked.

The means by which relief is obtained often gives valuable clue to the cause. Hot drinks help allay allergy to cold; while cold drinks aggravate it. When change of occupation gives relief, allergen must be sought in occupational environments. Notice should be taken of any particular food which may produce the symptoms or which may be intensely disliked by the patient. Dislike for certain foods by children may be purely protective, as such food may often act as allergens. This kind of dislike should be noted carefully and not ignored as whims and caprices of the child unless, of course, it can be proved so.

Most allergic people are unfavourably affected by fatigue, excitement, anxiety, stuffy and overheated atmosphere and also by cold and chill.

As diet plays the most important part in the causation of allergic manifestation it is necessary to determine the really offending one. For this elimination diets may be used along with skin tests. The method consists in providing a diet from which various articles of food are in turn excluded. Taking a specific example—if prawn or egg is suspected,—the result of an egg or prawn free diet should be watched. It means not only to exclude the offending diet as it is, but all others also which have the offending article as an ingredient. The test can be performed in another way and particularly in very severe and intractable cases. This is to start by giving as nourishment for a few days a substance, such as dextrose, which does not give rise to allergy, and then adding one food at a time to the diet. If symptoms return, the condition is likely to be due to the food last added, and this can be confirmed by eliminating this particular substance from the dietary and watching for the symptoms.

Skin Test:

After a thorough physical examination, skin tests should be carried out. There are two common methods:—the scratch test and the intradermal test.

Scratch test—The skin is sterilised with alcohol or ether, and one drop of N/20 sodium hydroxide is placed on it. A dry extract of the substance to be tested is dissolved in this drop and scratch made through the solution just sufficiently deep to remove a little of the epidermis, but not to draw

blood. This is best done in the forearm or the anterior surface of the thigh and in infants on the back. A control test is made at the same time by scratching through a similar drop without the protein to be tested. A positive reaction is evidenced by the appearance of a wheal with surrounding erythema within 15-30 minutes. In strongly positive cases the outline of the wheal is irregular owing to the presence of pseudopodia. The size of the reaction varies in different individuals. Some proteins give stronger reaction than the others. Pollens give the strongest and food the weakest reaction.

Intradermal test—An intracutaneous bleb is made by injecting 0·02 ml. of a solution of protein by a tuberculin syringe fitted with a short bevel 26 or 27 gauge needle. Separate syringe and needle should be used for each test substance. A control is made by injecting an equal quantity of buffered phosphate solution only. A positive reaction is shown by a wheal and flare. Sometimes a 'delayed reaction' takes place and this generally happens if dead bacteria is used as allergen. The reaction is not direct, i.e., occurring within half an hour, but is apparent 24-48 hours later. This 'delayed reaction' is characteristic of bacterial allergy, the typical reaction being an indurated area with some swelling and surrounding erythema. The best known example is tuberculin test. In cases of sensitisation to drugs such as aspirin or iodine a patch test may be more useful. A piece of lint about an inch square is soaked in the solution and applied to the unbroken skin and covered by some impervious material and held in position by adhesive tape. A control is also applied. In 24-48 hours a papular or urticarial reaction is seen at the site of application. Haphazard way of testing is to be deprecated. Only those proteins which are suspected from the patient's history are to be tested.

Although the skin test may be positive to a certain allergen, the removal of that substance may not cure the condition. This is due to the fact that positive skin tests to a given allergen may persist even after the sensitisation of the organism as a whole has disappeared. Reckman has put this phenomenon as "a history of past illness". It is also just possible that there may be multiple sensitisation or that specific antibodies though present elsewhere are not present in the skin. A trial and error by adding and subtracting the suspected substances from the diet and watching the result are of great value.

Treatment

The fundamental principle is to correct any associated condition which may act as the irritant. Proper investigation and a full examination may reveal conditions the correction of which may stop the allergic manifestations. In migraine, for instance, slight astigmatism may precipitate a migraine attack by causing eye strain, and the correction will often remove the symptoms. In spasmodic rhinorrhoea nasal polyp may be found and its removal may cure the condition. In all conditions of allergy focal sepsis should be looked for. Next, search should be made to find out the particular allergen (protein) which is responsible for the symptoms and the avoidance of this particular substance is all that may be required in a particular case. But this may not be an easy thing, as the exact cause may be difficult to find out.

During an acute attack adrenaline should be given. It relieves but does not cure. It is given subcutaneously in a solution of 1/1000, the dose being adjusted according to the need. To get its full and sure effect it should be given as early as possible. Better effect is obtained if it is given very slowly, say, a minim a minute ; or if given in a single dose the site should be massaged which may enhance the effect,—as adrenaline, by its local action, may constrict the blood vessels and consequently retard absorption ; and this effect can be eliminated by gentle massage.

Ephedrine can be given orally in doses of from ¼-2 grains. If it is given it should be about 2 hours before the attack ; and curiously enough the allergic symptoms generally recur at about the same time every day. Morphia undoubtedly gives relief in majority of cases, but its exhibition is inadvisable for fear of habit formation.

Specific desensitisation can be carried out by injecting an extract of the causative allergen in a series of gradually increasing doses. Suitable preparations of such agents as pollens, spores, dusts, vaccines and serums may be obtained from the pharmacists or prepared by proper dilutions and the dose must be adjusted to the degree of sensitivity exhibited by an individual patient to a given allergen ; and the rate of increase of the dose will depend upon the reaction, if any, to the previous dose. The dose is reduced if the former dose produced severe reaction. Those allergic diseases which are of seasonal occurrence, may be treated at their first appearance by injecting small doses of the extract of the specific allergen into or under the skin.

Preseasonal method—This is to desensitise the patient by gradually increasing doses well before the season begins.

Perennial method consists in maintaining the antibody titre built up by preseasonal treatment.

Usually doses of 0·2 c.c. of 1 in 50 extract are injected subcutaneously every two weeks. But the dose is required to be built up gradually to 1 c.c. of 1 in 50 extract just before the expected onset of the symptoms. House dust is perhaps the most important cause of perennial allergy. Its avoidance, though very difficult, should be aimed at. Desensitisation can be started at any time, because the exposure has no seasonal limitation. If the patient has multiple sensitisation, the various allergens are combined in one solution. But the better method is to give them separately from different syringes, and preferably on different dates.

When desensitisation is required against an infectious agent, diluted antigen or vaccine is injected at 1 to 3 days intervals as required in individual cases and the dosage increased and regulated in the same manner as described above. The desensitisation should be carried out cautiously particularly in sensitive people and with highly potent antigen. It is always advisable to keep a syringe prepared with adrenaline solution ready for any emergency,—as severe reactions may result from overdosage, to rapid increase in the dosage, or accidental injection into a vein.

Non-specific desensitisation may sometimes be carried out especially in patients whose specific sensitisation cannot be ascertained. By this is meant desensitisation by substances other than the specific antigen to which the individual patient is sensitised. It has been observed that in allergic diseases the symptoms ceased in certain conditions such as the acute infectious fevers, pregnancy and abscess formation. Non-specific protein shock which produces pyrexia does sometimes ameliorate the allergic symptoms. Such substances as peptone, tuberculin, blood (autohaemotherapy), T.A.B. vaccine, milk, sulphur in oil, non-specific vaccines, etc. have been used. The rationality of such treatment is doubtful. They act empirically. But then an attempt has been made to explain it. It appears that antibodies which are fixed in the tissues, may be set free in the circulation by means of "protein shock" or non-specific desensitisation, and thus change the condition from one of sensitisation to one of immunity. This hypothesis is corroborated by many observers. The details of the treatment with non-specific protein shock vary according to the substance used.

Autohaemotherapy is advocated. It is very widely used. Blood is withdrawn from a vein and injected intramuscularly into the gluteal region. The initial quantity injected is 2 c.c. which is gradually increased up to 10 c.c. and the injections are given at intervals of from 4 to 7 days.

If T.A.B. vaccine is preferred for non-specific desensitisation it shquld be given intravenously every 5 days. The initial dose is 50 million organisms, the next dose being 100 million, thereafter each successive dose is increased by 100 million until 500 million is reached. There may be some pyrexial reaction with rigor and sharp rise of temperature and rapid fall with profuse sweating.

Antihistaminic drugs are very widely used now a days and there are as many preparations with different trade names in the market as there are manufacturing concerns, with their special claims. It is not desirable to name any one particularly to avoid invidious distinction. The specific role of histamine in producing allergic reactions is not quite clear ; but the treatment with antihistaminic agents have given satisfactory results in many conditions provided the drug is potent, the dose suitable and given early enough at the very start of symptoms. The adult dose is 25 to 100 mg. by mouth 3 to 4 times a day after meals and at bed time. It can also be given parenterally in suitable doses. For infants and children, 2-3 mg. per lb. of body weight is given in divided doses over a 24 hour period. Most of the preparations available in the market may produce side effects such as somnolence, nausea or vertigo in some patients. If these are of any degree of severity another preparation may be substituted, as individual patients may react differently to the same preparation.

After all symptomatic therapy has its place in allergic diseases as in many other conditions. This depends on the different allergic conditions.

The subject is dealt with in its general aspects and it is not the aim of this article to treat in detail the individual diseases ascribed to allergy.

SPECIAL ARTICLE

AN APPROACH TO ANATOMY

S. P. JAIN, M.D., F.R.C.S.,

Professor of Anatomy, Medical College, Agra.

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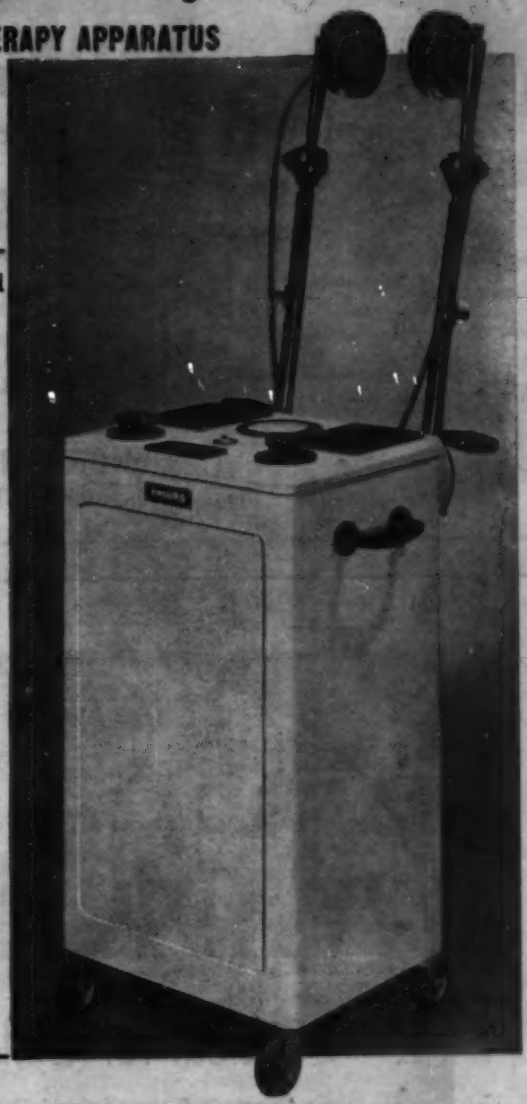

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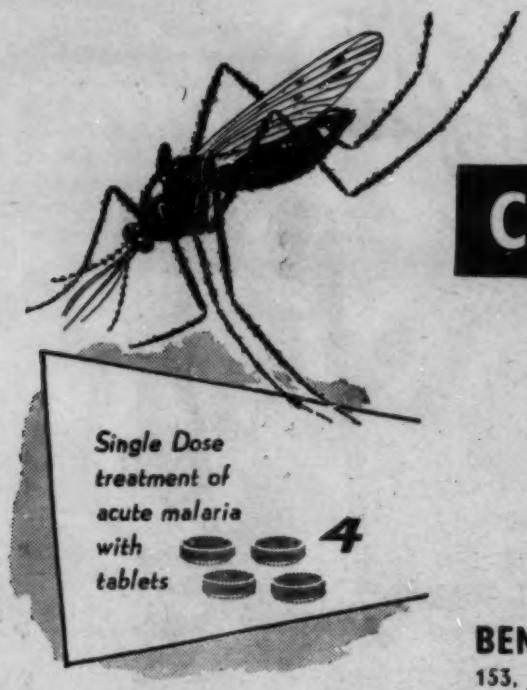

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ciation. Anatomy embraces the whole range of organic structure i.e. the organisation of elementary components of living matter into a complete cell, the organisation of cells into tissues, of tissues into organs, organs into systems and finally systems into fully integrated living creatures. It is also concerned with the science of genesis and evolution and thus it has a scope of entering into the history of the world. Anatomy aims at the study of the form and structure of all the living organisms and all those factors which determine or modify form and structure must be investigated by the anatomists. Such factors may be chemical, physical, physiological, developmental, and phylogenetic. Therefore a research-worker in anatomy has to be a jack of all sciences and master of most, so that he may be able to work in useful harmony with masters of allied fields. A modern department of anatomy must have all facilities for newer methods of investigation e.g. visualisation of gross pattern of vascular trees or duct systems by the use of appropriate injection material, the preparation of corrosive specimens, the applications of stereo-photography and use of modern radiographic methods. Study of muscular action and joint movements i.e. the science of ergonomics and electromyography and strain gauge dynamometry should be included in anatomical studies. Recent advances in neurology, histology, embryology, endocrinology, and physical anthropology are attributes of modern anatomy.

However, to a medical student in general, who is being prepared for a basic doctor, gross and topographical anatomy is the most important branch which runs parallel with the advances of medicine and surgery. It is best learnt with the help of a scalpel in the dissection room, but at the same time the student should acquire the knowledge of the human body as a working mechanism by studying his own body and those of his fellow students. If he applies the study of the dissection room to the understanding of the living in the play fields and gymnasium, he can use them as accessary anatomical laboratories, where he combines pleasure, sports and study.

A student on entering his career in medicine, must try to corelate his pre-medical work in physics, chemistry and biology with the pre-clinical work in anatomy, embryology, histology and physiology. At the same time he must feel from the beginning that most of our understanding of the working mechanism has been gained through the study of disorders in the body mechanism from the knowledge of pathology, clinical medicine and clinical surgery. Therefore the study of anatomy becomes extremely delightful if it is associated with some study of the abnormal.

Unfortunately most of the students, medical ones are no exception, regard their students' career as something to be 'got through' or 'to be passed through' a hurdle of examinations, whether they are educated in the process, is to them a secondary consideration. This attitude in a medical career must be actively discouraged at all stages since medical profession is a life long process of growth.

The teaching of anatomy and physiology have got to be made more interesting and useful than what they are today. The difficulties of a medical student, as he enters a medical college, are that he sees before him a very long train of the courses of examinations in the pre-clinical and clinical years. He hears from his seniors that most of what is being taught in the pre-clinical years is useless and the doctors, with whom he converses, tell him that they have forgotten all their physiology and anatomy to no practical disadvantage in the practice of their profession. The other difficulty which he has to face is the absorption of a mass of facts and this prevents him from exercising his higher mental faculties. He also finds no time for recreational and cultural activities of the college and university.

All the above problems have got to be countered by the mutual cooperation of the student and the teacher from the beginning of the medical studies. The faculty of curiosity lies dormant in all of us and it is only through this faculty that we produce research workers, good clinicians and diagnosticians. This faculty must be developed and encouraged while the student is given a chance of studying anatomy by himself through the dissections on the cadaver.

Anatomy should be taught in a spirit of criticism in order to open the students' mind to its stepping and transitory character. A well ordered and realistic presentation of facts of anatomy should be combined with a suggestive method of dealing with the problems arising out of it in the professional practice.

This suggestion takes us at once to the present plight of pre-clinical teachers. Most of them regard medicine and surgery with complete indifference. They develop a keen scientific outlook and unfortunately forget their professional aspects. Some of them do not possess even a medical atmosphere about themselves, which makes the pre-clinical student indifferent to the utility of the subjects of anatomy and physiology and he is simply anxiously waiting to get through the first M.B., B.S. hurdle to find a medical atmosphere. The result is that, as he enters the hospital wards, he finds the clinicians constantly complaining against him about his lamentable standard of ana-

tomical and physiological knowledge. Therefore, the whole system needs an urgent remodelling, which of course, shall be vehemently opposed by the conservative anatomists and physiologists themselves.

There is too big a gap between the pre-clinical and clinical teaching and there is too much of departmentalism. The specialists dealing with their subjects, individually, entirely forget that they are training a basic doctor and that they are not bringing out an anatomist, a physiologist, pathologist or pharmacologist. These basic sciences have to cater for medicine and surgery and the present trend which the teachers of these subjects have developed that their subjects have become free from slavery to medicine and surgery and that they have become masters of independent subjects to be studied and taught as pure sciences, must necessarily be uprooted.

There should be a better co-ordination of the departments of anatomy, physiology and pharmacology with the teaching hospital and with the clinical side of the college. There should be common teachers partly working in the hospital and partly in these departments, as in case of subjects such as medicine and surgery. Teaching of the basic medical sciences must be in direct relation to the living problems of the human body. Anatomy is essentially a mass of facts, each of which is of equal value in the mind of a pure anatomist, but from the point of view of the clinical training of the medical student, some of these facts should be omitted from the course, while others could with advantage be stressed and elaborated. Of course with the introduction of these desired conditions, the examiners will also have to change their present style and I feel that the trend has certainly changed for the better at least at some places.

Departmentalism and lack of integration are very evident even in pre-clinical education with the result that the student is driven along several lines of thought simultaneously and at the same speed. The courses of departments of anatomy, physiology, biochemistry and pharmacology are often planned separately without relation to one another. A student may learn the structure of alimentary canal in one term from the anatomist, the breakdown of ingested food in another term from the biochemist and the movements and secretions of the gut in a third term from the physiologist. This leads to a burden of the student and failure of co-ordination on his part. The only remedy lies in a closer collaboration between the teachers of different departments, and this is possible when the teachers concerned get over the centrifugal force of departmentalism. It has been noted often that when the representatives of the different departments gather together, they do not feel that they have a common responsibility and a common goal i.e. the training and upbringing of medical men for the service of humanity.

Integration of structure and function is essential. A sound basis of anatomical knowledge of the nervous system makes the understanding of neurology so simple. Surgery is nothing but a sound integration of the anatomical and pathological principles with 10 per cent of commonsense. Knowledge of histology is equally essential for the integration of anatomy and physiology, but one finds a regular warfare in the medical world today, as to who, should have a controlling power over the poor histology—anatomists or the physiologists. Why not make the pathologists take it over?

Integration of the basic and clinical medical sciences is essential at all stages in a medical training even for post-graduates. The surgeon must know his pathology and anatomy and at the same time he must be a physician first and physician last. The same is true of the physician. He must know when he should seek the help of surgery for his patients. All diseases have both medical and surgical aspects at some stage or the other and sometimes both at one time. There is no fundamental difference between the diseases treated surgically and those treated medically. The clinical and laboratory methods of diagnosis are the same and their morbid anatomy is also common. Therefore all the medical teachers must have an insight in the living problems of the human body. The present system of water tight compartments of different subjects in a medical college for the training of under-graduates is essentially and basically wrong.

Leaving alone the problems of research workers, which class probably exists only on finger tips at present in our country, we must see that a teacher of one subject must not be allowed to forget the application of other subjects in intimate association of his own to the living body. A teaching hospital attached to any medical college should be a common ground of all the departments in the college and all the teachers must have something to do with the living. The workers who like to devote their life to the animal kingdom alone should, of course, not be disturbed, because their work too is extremely valuable in relation to the advancement of the scientific aspect of the medical problems. They do need encouragement in equipment which is entirely a problem of medical administration.

At present there is a tendency of a creation of a mental gulf between those engaged in research and those engaged in clinical routine work. In fact research in a great measure has shifted its ground from the bed side to the laboratory, but useful publications are possible only when they come out from a team of laboratory workers and clinicians working together and it should certainly be preferred if the clinical and laboratory work be combined in one individual.

At present there is given very little chance to a student of detecting a clinical significance in what is taught in our so called scientific introduction to medicine. This leads the natural springs of curiosity of the medical student to supression instead of being explored to irrigate the interest in basic medical sciences. That is the reason why the top products of medical profession, especially in our country, do not find favour with these subjects as the choice of their life careers.

In addition to all the above, the building up of personality of the medical student fitting to this profession has also to be developed side by side. The prime object of this profession is to render service to humanity either by way of doctoring the people or by way of introducing researches and new methods of treatment or by producing good and ideal teachers. Therefore the character, devotion, and personality have got to be developed to solve this human equation of this honourable and highly respectable profession.

An average medical student has defects which are to be attributed chiefly to the manner of his training. He tends to lack curiosity and initiative, his powers of observation are relatively undeveloped, his ability to arrange and interpret facts is poor, he lacks precision in the use of words and above all he thinks his profession as a business career for his living. All these defects could be easily minimised if the proper training is imparted from the beginning i.e. from the dissection room stage. Education includes acquisition of knowledge, of skill and of attitude. Of these the last is the most important. Initiative, thought and responsibility are best learnt in the dissecting room where a student is given a freedom which is not possible to be permitted in the wards or in other laboratories.

Living anatomy must also be learnt at the same time with the help of radiography and other clinical examinations e.g. the use of stethoscope, auroscope, laryngoscope, ophthalmoscope, sigmoidoscope, bronchoscope, urethroscope, cystoscope etc., and must come within the domain of the pre-clinical teachers. Biweekly clinical excursions should be arranged where the teachers of anatomy should take the students to the wards and out-patient departments to give them a medical atmosphere and to explain to them the value of the subject of anatomy, in relation to the practice of medicine and surgery, on the living. At least 50 per cent teachers of anatomy should be attached to the teaching hospital and must be given clinical work just as teachers of medicine and surgery—of course the teachnical difficulty of private practice and vested interests come in the way of the applications or even entertainment of such proposals. However, these difficulties will be obviated when all the teachers in medical colleges are given an equal option of being allowed private practice or else none be allowed private practice and all teachers are employed on equal terms and conditions.

The teaching and training in anatomy by the anatomists must continue in the so called clinical phase of a medical student and equally so in his post-graduate training. Surgeons and physicians should equally be prompted to refer their anatomical problems to the department of anatomy which should be more intimately attached to the teaching hospital of the institution than in the present system.

CASE NOTES

DIFFUSE SYMMETRICAL LIPOMATOSIS OF THE FACE

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A girl aged 10 years was seen in the out-patients department of Sri Chamarajendra Hospital, Nassan, with disfigurement of the face due to a symmetrical enlargement of the parotid, submaxillary and sublingual regions (Fig. 1, *vide* Plate). She was admitted with a provisional diagnosis of Mikulicz's disease.

On detailed examination it was seen that the symmetrical swelling was confined to the region below the zygoma on both the sides and the swelling was tender. There was also a tender swelling of the upper portion of the abdominal wall which was seen as though hanging over the lower portion (Fig. 1, *vide* Plate). This ruled out Mikulicz's disease. The tender swellings of the face and abdomen were diffuse lipomata. They were of 4 months' duration. The lipoma of the face had a symmetrical distribution and was confined to the

preauricular region and beneath the chin. The lipoma of the abdominal wall was confined to the upper half portion.

The girl did not exhibit asthenia, dermatographia or any mental symptoms. She was a normally grown child weighing 65 lbs. Her hands and feet looked normal. The distribution of fat elsewhere in the body was normal, and the development of the external genitals was normal.

Clinical examination of other systems did not reveal any abnormality. Hb—95 per cent ; total R.B.C.—4·5 mill. per c.mm., total W.B.C.—8,000 per c.mm. and the differential count was poly—65 per cent, eosino—3 per cent ; lympho—28 per cent and mono—4 per cent. E.S.R. was 7 mm. in one hour (Wastergren). Urine showed no abnormality. X-ray of the skull did not reveal any abnormality. B.M.R. could not be done for want of facilities.

The girl was put on thyroid tablet ½ gr. t.d.s. for 8 days. There was discernible improvement. However, the girl got discharged from the hospital at request before the thyroid treatment could be continued, or other treatment adopted.

This was a case of diffuse symmetrical lipomatosis due perhaps to endocrinal disturbance of the pituitary and thyroid glands.

PURULENT PERICARDITIS TREATED WITH STREPTOKINASE-STREPTODORNASE

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Streptokinase and streptodornase (SK-SD) enzymes elaborated by the haemolytic streptococci have been demonstrated to exert a liquefying action on serofibrinous, sanguinous and purulent exudates. Streptokinase acts as a catalytic agent acting on a fibrin-lysing system present in the euglobulin fraction of human blood. This agent activates the fibrin-lysing system which causes liquefaction of fibrin. It also inhibits the change of fibrinogen to fibrin. Streptodornase is an enzyme which causes breakdown of extracellular nucleoprotein or the nuclei in degenerating cells. Isolation and purification of these enzymes followed by a close study of their actions led to their therapeutic application as an effective physiological curette. SK-SD have been found to be useful in cleansing of wounds by local application and in the treatment of infective cavities by introduction of a freshly prepared solution followed by aspiration of the liquefying fluid after 12 to 24 hours. Removal of liquefied fibrinous deposits prevents thickening of the cavity wall and allows access of the antibiotics to the underlying area. There is also a mechanical advantage in the aspiration of fibrinous exudates after the action of these enzymes.

Purulent pericarditis is a serious condition as regards the immediate prognosis and sequelae. Pericardiostomy with open or closed drainage is advocated. Infection can be controlled by antibiotics but prevention of adhesive pericarditis coming in as a sequela is still a problem. As such the following case is worth reporting.

Case Report

R.N., male child, aged 7 years, was admitted on 3-9-1952 in our hospital in a dyspnoeic condition, with a history of irregular fever for three weeks. His breathlessness and pain in the left side of his chest started about 3 days ago. The onset of his disease was reported to be insidious. It was gathered from his parents that he was treated at his residence in the beginning for bronchopneumonia with sulphadiazine by mouth and procaine-penicillin by injection for about 15 days. His past history and family history did not reveal anything significant.

The child was of average build and nutrition. He was acutely dyspnoeic, with marked cyanosis, congested neck veins and a puffy face. His temperature was 100·6°F. His pulse was of low volume and was paradoxical in character. Pulse rate was 120 per minute, and respiration rate was 60 per minute. Blood pressure was 106/60 mm. Hg. during expiration and was practically unobtainable during the inspiratory phase. There was a diffuse bulging of the precordium. The area of cardiac dullness was markedly increased. There was no tracheal shift to any side. Heart sounds were weak and distant. Breath sounds were diminished at both bases but markedly at the left base where a few crepitations were also audible. The abdomen was distended and there was evidence of free fluid in the peritoneal cavity, the liver was palpable about five fingers below the costal arch and very tender. Fluoroscopy followed by paracentesis confirmed the diagnosis of pericardial effusion of a purulent nature.

Laboratory findings—Hb. 12·4 g. per cent W.B.C.—10,500 per c.mm. : poly—56 per cent, lympho—38 per cent, mono—3 per cent ; eosino—3 per cent. No abnormal cells or parasites were found. E.S.R. was 78 mm. (1st hour). Urine examination did not reveal anything significant. Direct smear of the pericardial fluid showed plenty of pus cells and one chain of gram positive diplococci (shadow bacteria). Culture was sterile. Culture examination of subsequently aspirated fluid was not done. A tuberculin test after three weeks' stay in hospital was negative upto 1 in 10,000 dilution.

Treatment—Immediate paracentesis and aspiration of about 16 ounces of fairly thick purulent fluid gave marked relief to the patient. Aspiration had to be repeated after three days. A freshly prepared solution of SK-SD (100,000 units SK. and 25,000 SD.) in 10 c.c. normal saline was introduced into the pericardial cavity 24 hours before aspiration. About 12 ounces of purulent fluid was aspirated. It was however thinner in consistency than before. This procedure was repeated after 8 days using the same quantity of SK-SD and about 6 ounces of thin seropurulent fluid was aspirated.

There was a rise of temperature upto 102°F. on the day of introduction of SK-SD on the first occasion and upto 105·6°F. on the second occasion. On both occasions the temperature, however, subsided within 24 hours.

As the patient had enough of penicillin and sulphadiazine, he was put on aureomycin by mouth (250 mg. 6-hourly for 12 days). General supportive and symptomatic treatment was given as and when necessary.

Improvement in his general condition was gradual. He became afebrile after 5 days in hospital although he had febrile reaction to SK-SD on both occasions. Pericardial effusion did not recur after the 3rd aspiration as seen by fluoroscopy and skiagraphy. Some amount of thickening of parietal pericardium was evident from a skiagram taken after aspiration showing fluid and air in the pericardial sac (Fig. 1 A, *vide* Plate). A pericardial friction rub appeared 3 days after the last aspiration and lasted for 10 days. His neck veins became gradually less and less prominent and the liver reduced in size. There was no clinical evidence of free fluid in his abdomen after four weeks in the hospital.

He was discharged after 7 weeks' stay. His liver was still palpable about 2½ fingers below the costal arch. He could move about freely without any discomfort at that time. E.S.R. was 5 mm. per hour. The skiagram of the chest showed appreciable diminution of cardiac shadow but it was still bigger than normal.

Since discharge from the hospital regular contact with the patient was maintained. He showed progressive improvement. The last check up was on 15-6-54. The child was in good general health and was found to be of active habits. There was no oedema in his legs and no engorgement of the neck veins. His liver was still palpable one finger beneath the costal arch. Heart sounds were normal. There was no systolic retraction of the chest wall. Exercise tolerance test was within normal limits. B.P.—120/84 mm. Hg. Venous pressure in the median cubital vein was 13 cm. of water, and in the saphenous vein in the leg 13·5 cm. of water. The skiagram of the chest (Fig. 1 C, *vide* Plate) showed a slight diminution in the size and change in the contour of cardiac silhouette as compared with the last skiagram on 11-2-53 (Fig. 1 B, *vide* Plate). There was also a diminution of vascular width, along with appearance of sulcus between the shadows of great vessels and auricle on the right side. Heart lung co-efficient was within normal limits. On fluoroscopy fairly forcible apical pulsation and pulsations at both borders were seen.

Comments

There was a rise of temperature after the introduction of SK-SD into the pericardial sac on both occasions. The products of enzymatic digestion may be a factor in causing an elevation of the temperature. A second factor may be the direct result of cleansing produced by SK-SD, thereby releasing the bacteria imprisoned in fibrinous deposits.

SK-SD is an useful topical adjunct in these conditions. Its use, however, does not eliminate the need for application of the usual therapeutic measures. Aureomycin was administered to control the infection as there was an apprehension that the case may not respond to penicillin. Drainage of purulent exudates was effected by aspiration after prior liquefaction by SK-SD. The parietal pericardium was found to be thickened on x-ray examination. These enzymes however do not act on fibrous tissues. However, interference to the action of antibiotics was probably removed by the liquefaction of fibrinous exudates. Thereby the normal process of repair was hastened without the formation of more fibrous tissues and crippling adhesions as judged from a follow up of the case.

Encouraging results after use of SK-SD in cases of empyema thoracis prompted its application in this case. The end results appear to have justified its use.

Summary

A case of purulent pericarditis subsequent to an attack of bronchopneumonia has been presented.

Effective drainage of pus was achieved by three aspirations two of which were preceded by introduction of streptokinase-streptodornase solution into the pericardial sac.

Aureomycin was the antibiotic used.

Recovery was satisfactory. Follow-up study confirms that there had been no adhesive pericarditis.

Acknowledgment

My thanks are due to Dr. G. L. Vaishnavi, Chief Medical Officer, Calcutta Port Commissioners, for his permission to publish this report, to Dr. B. K. Dey, for radiological examinations and to Messrs. Lederle Laboratories (India) Ltd. for the free supply of Varidase brand streptokinase-streptodornase used in this case.

NEONATAL VASCULAR THROMBOSIS

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A gangrene of the lower extremity after intraumbilical injection in the asphyxiated infant is a very rare and interesting complication. There has been report of a very few cases in the literature upto date.

Mills (1949) reported 8 cases from the United Birmingham Hospitals. All the babies were born asphyxiated. Other methods of resuscitation having failed nikethamide was injected into the umbilical cord. Within 6-60 hours after injection one or both lower limbs in the infants were found to have turned cold, blue and paralysed. 2 out of 8 cases died.

Brody (1951) reported postmortem findings of an asphyxiated infant who had been given nikethamide *via* umbilical vessels. The left lower limb, gluteal region, scrotum and abdominal wall became gangrenous causing death of the infant. No further case could be traced in the study of the literature. There seems to be only 9 cases reported so far.

In 1952, we experienced a similar case at the Eden Hospital, Calcutta. In view of the common practice of revival of asphyxiated infants by intraumbilical injection of nikethamide and lobeline, the occurence of gangrene in the lower limb after such an injection has special significance and is worth recording.

Case Report

On the 4th October, 1952, at 4-40 A.M. Mrs. K., a Hindu female aged 25 years, 1st gravida, was admitted in the Eden Hospital. She had been in labour for 12 hours before admission and was postmature by one week. The B.P. was 170/100 mm. Hg., urine contained trace of albumin. She had oedema of the legs, pulse was 100 and respiration 26 per minute and temperature 98·2°F. The presentation was right occipito-posterior and vertex was not engaged. The cervix was 2 fingers dilated and the membranes were intact. The pelvis was borderline. A short trial of labour was given, but uterine contractions were weak and infrequent.

At 11-15 A.M. F.H.S. became irregular and further trial appeared inadvisable. A lower segment caesarean section was done under gas and oxygen anaesthesia and a male baby 7 lbs. 15 oz. in weight was delivered.

The baby was severely asphyxiated and was pale. After cleaning air passages of mucus, oxygen was given. But there was no improvement and 1 c.c. nikethamide and 1 c.c. of 1/20 grain lobeline were injected into the umbilical vessels. Gradually circulation improved, respiration started and the baby cried. When the condition appeared satisfactory, the baby was put to the cot.

At 7 P.M. the same evening, it was discovered that the left lower extremity of the baby had turned blue, cyanosed and paralysed upto the groin. The pulsation on the left femoral vessels was absent. Slightest movement of the extremity caused pain to the baby as evidenced by prolonged cry. There was no oedema of the leg. The right lower extremity and the rest of the body was normal. It was clear that the arterial blood supply to the limb was disturbed. No intramuscular injection had been given to the limb since birth.

The leg was lightly covered with dressings and immobilised with a splint to prevent trauma and to ensure rest. Penicillin 500,000 units by mouth was given 4 hourly in between feeds and all injections were avoided. The leg was kept at room temperature and extra heat was not given.

The leg later turned mottled in colour and circulation did not return. The baby however took nourishment regularly and general condition remained satisfactory. On 8-10-52 the foot became black and gangrenous. Amputation was postponed till a line of demarcation appeared between healthy and dead area.

On 12-10-52 the line of demarcation appeared at the knee and amputation was considered. But relatives declined operation and the baby was discharged at their own risk. On personal enquiry later on, it was gathered that gangrene had turned moist and infected and the baby expired on 18-10-52. No postmortem examination was done.

Discussion

This case under review brings the total to 10 cases reported so far.

The main problem is what is the cause and the mechanism of the gangrene? Evidently the main arterial trunk to the lower limb i.e., the external or common iliac vessels must be obstructed. Acute obstruction to an artery may be produced by a process of either embolism, thrombosis or ischaemia. Autopsy was possible in 3 out of the 9 cases reported in the literature and it revealed thrombosis of umbilical, hypogastric and external iliac arteries of the corresponding side in all the 3 fatal cases. In one case where buttocks and abdomen were gangrenous, the thrombosis had extended into the inferior mesenteric and gluteal arteries in addition.

The next question is the mechanism of thrombosis of the iliac arteries. In the new born, the umbilical artery of each side continues as the hypogastric artery and joins the external iliac artery to form the common iliac artery. So if a process of thrombosis starts at the umbilical artery, the iliac arterial trunk will easily be involved in it.

Now what is the cause of the thrombosis of the umbilical arteries? Mills (*loc. cit.*) thought this to be due to nikethamide injection being given accidentally into the artery instead of the umbilical vein in the

hurry of resuscitation. In the asphyxiated state when the vessels become collapsed and the two umbilical arteries coil round the vein embedded in the Wharton jelly it is not easy to tell an artery from the vein from the surface of the intact umbilical cord. So such an error is not impossible. In my attempt to find a method of distinguishing the vein from the arteries I observed that when the umbilical cord is palpated between fingers, the arteries feel more cord like being thickwalled than the vein which is collapsible and is of bigger calibre. This may serve as a practical tip in identifying the vein in the umbilical cord.

Mills's explanation of arterial injection seems feasible but (a) can the arterial insufficiency be due to ischaemia rather than thrombosis and (b) can such arterial ischaemia occur even if the injection is made into the vein and not in the artery? Recently there have been in the literature several reports of cases of arterial ischaemia after intravenous drip transfusions of blood or saline were started in shocked patients. In such cases it was clearly demonstrated that the injection was intravenous and the artery was not touched.

Sutton (1952) reported a case where the hand became cold, cyanosed and pulseless after an intravenous drip was started. The brachial artery was exposed after dividing bicipital aponeurosis and was found to have turned constricted and pulseless. On local instillation of papaverine the vessel started pumping and the hand regained circulation. Similar cases were reported by Redman (1952) and Vaughan (1952). We know that in phlegmasia alba dolens venous thrombosis is associated with arterial ischaemia in the inferior extremity.

Is it possible then that a similar mechanism was responsible for arterial lesion in asphyxiated infant as well? It is likely that ischaemia starts the process, and thrombosis follows when ischaemia is not relieved soon.

Regarding the treatment, once the lesion is diagnosed, rest and prevention of trauma and sepsis must be ensured. It is wrong to give heat to the limb. Drugs like papaverine, intravenous ether have vasodilator properties and may be considered. Anticoagulant therapy does not seem to be very rational in this type of cases and has its dangers also.

Summary

A case of vascular thrombosis in the new born after intra-umbiiical injection in an asphyxiated infant is recorded. World literature is reviewed. 9 cases could be traced so far.

The theories as to the causation are discussed. An ischaemic mechanism is suggested.

For reviving the asphyxiated infant, injection of nikethamide or lobeline into the umbilical cord should be given very carefully so that injection is not made into the arteries and the limbs should be watched carefully thereafter for development of any vascular deficiency.

Acknowledgment

My thanks are due to Mr. M. N. Sarkar, Superintendent, Medical College Hospitals for permission to report this case and to Dr. M. Biswas, Dr. U. C. Chakravarti and Prof. S. C. Bose, for kind suggestions and co-operation during management of the case.

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A CASE OF LEPTOSPIROSIS ICTEROHAEMORRHAGICA IN MAN TREATED WITH OXYTETRACYCLINE

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Leptospirosis icterohaemorrhagica is a rare and usually a fatal disease in men. There are at least 30 serologically distinguishable strains (Beeson and Hankey, 1952) of leptospira which are pathogenic for man and which produce various symptom patterns. Of these 30 strains, at least two produce jaundice—*Lept. icterohaemorrhagiae* produces spirochaetal jaundice (Weil's disease), and *Lept. bataviae* produces Indonesian Weil's disease. One other strain, *Lept. pomona* produces symptoms of meningeal irritation and may simulate virus infections; in such cases the cerebrospinal fluid shows a variable pleocytosis, with cell counts as high as 3000 cells per c.mm. and a slight increase in protein content. Man is infected through contact with infected animals or their excreta. The sewer rat serves as the primary host of *Lept. icterohaemorrhagiae*, while man, dogs, cattle and swine serve as secondary hosts; and these latter are infected either from the rat or from one other. The following case is reported, as the condition is rare, and further as the case responded favourably to treatment with oxytetracycline.

Case Report

M.N.B., a Hindu male, aged 60 years, a clerk was admitted on 13-11-1953 to Mayo Hospital with the following complaints: (1) fever with nasopharyngeal catarrh for six days, prior to jaundice; (2) jaundice—8 days.

History of contact—He had gone on a visit to his son-in-law who was suffering from jaundice, and stayed there for 5 days. He developed jaundice 3 days after his return from his son-in-law's house.

General examination—Strong, healthy build; good physical development; toxic look; intense yellow coloration of conjunctiva; skin was also yellow. Two days after admission he developed

profuse petechial dot-like haemorrhages over the sternum, epigastrium, right arm and forearm, and on both the legs over tibial shafts. Abdomen—generalised discomfort ; anorexia ; constipation 12 days ; but stool yellow. Liver—enlarged. Heart—first sound weak. Lungs—a few rales at bases ; otherwise normal. Nervous system—normal ; but mental apathy and stupor from the 6th day of admission for 4 days (stage of cholaemia).

Laboratory data—Blood examination : 14-11-53, W.B.C.—16,600; poly—90 per cent, lympho—10 per cent.

16-11-53, van den Bergh's test—immediate direct reaction. Icteric index = 216 units. Stool examination—occult blood strongly positive.

18-11-53, blood from the vein was sent to the School of Tropical Medicine for serological test for *Lept. icterohaemorrhagiae* and was found positive.

1-12-53, W.B.C.—12,500 ; poly—80 per cent, lympho—16 per cent, mono—1 per cent, eosino—3 per cent. van den Bergh's reaction—biphasic. Icterus index=20 units.

Progress of the case—The patient became progressively worse. Jaundice became more intense. Two days after admission petechial haemorrhages appeared over the body and the limbs. From the sixth day he became semi-stuporose, and later comatose. Daily injections of intravenous glucose, vitamin K (10 mg.) and vitamin C (500 mg.) were given. Methionine 1 g. three times a day was also given. He had slight temperature. As he was in such a bad state from 18-11-53 he was given antibiotic treatment in the form of oxytetracycline 250 mg. intravenously daily for 3 days from 19-11-53 and thereafter 1 g. daily by mouth for 6 days from 22-11-53. The second injection of oxytetracycline intravenously seemed to have turned the tide ; and the patient began to improve steadily thereafter. He regained his consciousness and then his mental alertness ; and his jaundice also began to fade away. He was discharged on the 32nd day after admission i.e. on 14-12-53. At discharge his urine was clear, and the conjunctiva was almost white—he was eating better and felt much stronger.

Discussion

The mortality of Weil's disease is generally high. It has varied between 4 and 60 per cent in different series, with an overall mortality of 30 per cent. (Bertucci, 1945). Result of treatment has so far been generally unsatisfactory. Arsenical and bismuth compounds, and immune serum had been used in the treatment of leptospirosis; but they did not stand the test of time. Sulfonamides are devoid of therapeutic value. Active immunization with heat-killed leptospira organisms produced good results in a few cases (Das Gupta, 1942).

Antibiotics are now being used on a wider scale. Penicillin treatment has given good results in some cases of leptospiral infection and poor results in others. Hall *et al*, (1951) reviewed in detail the results of treatment in 67 cases of leptospirosis in Puerto Rico with five antibiotics (penicillin, streptomycin, chloramphenicol, aureomycin, and oxytetracycline). They did not notice any appreciable effect upon the clinical course of the disease in man even when the drugs were administered relatively early in the course of the disease. However, many individual case reports have been published from time to time claiming therapeutic efficacy of aureomycin (Whitehouse, 1952) and oxytetracycline (Liebowitz and Schwartz, 1951) in the treatment of leptospirosis.

The author of the present paper found himself in a great dilemma when a moribund case of leptospirosis icterohaemorrhagica with petechial haemorrhages and in a stuporose condition came under his care. Aureomycin and oxytetracycline are chemically very similar; however, it was decided to use oxytetracycline in the present case. Though the drug was given in very small dose (250 mg. intravenously, or, 1 g. by mouth per day) yet the patient responded well and recovered quickly. Though no definite conclusions can be drawn from a single case, yet the marked improvement in the clinical course of the patient after the administration of this drug appears to be more than coincidental. Hall *et al* (*loc. cit.*) reported the largest series of leptospirosis cases treated by antibiotics (of the 67 cases, 8 were treated with oxytetracycline) and recorded negative value of the five common antibiotics in its treatment, but results as in this case cannot be ignored. Wider experience and further critical observations are necessary to assess the value of these antibiotics in leptospiral treatment.

Summary

Good response to oxytetracycline in a moribund case of Weil's disease with petechial haemorrhages and stuporous condition is reported. In view of the grave condition of the patient, the response to the drug is considered to be satisfactory.

The good response was obtained with a small dose of the drug, 250 mg. intravenously, or, 1 g. orally per day.

Acknowledgment

The author expresses his gratitude to the Surgeon Superintendent of the Mayo Hospital for permission to publish this paper, and to Dr. S. C. Sen, Prof. of Protozoology, School of Tropical Medicine for examining the blood of the patient for leptospira.

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EPIDEMIC DROPSY

Though epidemic dropsy has been occurring in India since 1878[1] its aetiology remained unsettled till a few years ago. Following initial speculations regarding the infection and deficiency theories, it was soon realised that the disease was related to a toxic substance present in the food supply. Rice was thought to be the offending food chiefly because of the predominance of the disease among rice eating people and the presence of certain opacities in the rice grains but the theory was not supported by experimental observations. In the mean time the presence of a toxic substance in the mustard oil was suspected as the possible cause and in 1926 the disease could be traced to Katakar (argemone) oil poisoning[3]. The argemone oil theory was later put on a more stable foundation by human feeding experiments[3, 4], production of an epidemic dropsy like condition in animals[5] and the isolation of toxic alkaloids from the oil or seeds[6, 7]. The chief features in the pathogenesis of the disease viz., increase of capillary permeability[8] and vascular dilatation and proliferation[9] have also been recently demonstrated using special techniques in animals with the total alkaloids of argemone seeds. Rise of ocular tension has been produced in rabbits following subconjunctival injection of argemone oil or sanguinarine[10]. These experimental observations now leave little doubt about the argemone oil theory of epidemic dropsy though there may yet be unknown factors, perhaps the state of protein or vitamin deficiency or others, which predispose individuals to the toxicity. This would explain the less severity of or freedom from the disease in certain members of a family eating the same food. It is important to note in this connection that a cheap mineral oil, white oil, which is colourless and odourless and may be an attractive adulterant for any type of cooking oil is also toxic to monkeys and rats[11]; it is difficult to say however, if it may have any relation to epidemic dropsy.

The disease in epidemic form has not occurred in West Bengal since 1950 but there was a large outbreak recently in Nadiad and contamination of groundnut oil with argemone oil was detected. Elsewhere in this Journal will be found two articles on cases of the Nadiad epidemic[12, 13]. Report of the disease caused by contamination of wheat flour with powdered argemone seeds was also obtained from Africa[14].

Treatment of the disease has been unsatisfactory in the absence of a suitable antidote. British anti-Lewisite (BAL) protected rats and mice against lethal doses of sanguinarine or total alkaloid[8, 15] but did not influence the rise of capillary permeability or vascular changes and did not show any improvement in limited clinical trial[16]. Though cortisone has been reported favourably in one case elsewhere in this Journal,[13] experimental studies in animals do not indicate any beneficial effect[15, 16]. Uptil now, therefore, omission of the toxic oil with rest and a high protein low salt diet remains the basic treatment[17]. Diuretics and sometimes anti-histaminics have been advocated.

The disease, however, should disappear if strict measures are adopted to prevent the sale of argemone seeds and adulterated oils and if certified pure oil is made available to the public. The onus of such measures rests with the Government and other public bodies and occurrence of cases would prove the inadequacy of the measures adopted. Individuals can protect themselves by testing each batch of oil with the help of nitric acid or hydrochloric acid[17] tests both of which can be very simply performed.

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CURRENT MEDICAL LITERATURE

Needle Biopsy of the Lung

DUTRA AND GERACI (*J.A.M.A.*, **155**: 21, 1954) write that it is often extremely difficult to ascertain the nature of a lesion in the peripheral portion of the pulmonary parenchyma. Roentgenographic evidence of the presence of a region of increased density within a lung is always an indication for additional diagnostic procedures. Among those frequently utilised are examination of smears of sputum for organisms and malignant cells, cultures for bacteria and fungi, and bronchoscopy. All of these may fail to provide a definitive diagnosis, especially with lesions located distal to the secondary bronchi, and in recent years there has been an increasing tendency for physicians to recommend thoracotomy with biopsy resection of the lesion in such circumstances. There is a well-characterised group of cases, however, in which the latter may be neither desirable nor practical.

Needle biopsy of peripheral masses in the lung is indicated when there is reason to believe that such masses are incurable malignant tumors and when other diagnostic measures have failed to identify the lesions. The use of such biopsies can supply information that must be obtained before rational palliative therapy can be started.

The procedure is a simple one. The only special equipment required is a Vim-Silverman biopsy needle. A barbiturate and morphine or meperidine hydrochloride are used as premedication. Under fluoroscopic control the location of the tumor is ascertained, and by rotation of the patient the point where the lesion is nearest the chest wall is determined. This area of the chest wall is marked with thimerosal (Merthiolate), and the room is lighted while the skin and the subcutaneous tissues are infiltrated with 1 per cent solution of procaine hydrochloride. The biopsy trocar and sheath are inserted through the skin and appropriate intercostal space in the direction of the tumor. With the patient again before the fluoroscope, the trocar is passed into the lung tissue and the periphery of the tumor mass. The trocar is then withdrawn from the sheath, and the cutting blades are inserted down the sheath into the tumor mass. The blades are driven forward to the hilt with a slight twisting motion. This carries them approximately 2 cm. beyond the sheath and into the tumor tissue. The blades are then rotated completely several times to sever the core of tumor tissue and the blade is then withdrawn. The core of tumor tissue is found between the blades, and it is dropped into a 4 per cent solution of formaldehyde.

After the needle has been withdrawn, the patient is again examined fluoroscopically to exclude the possibility of pneumothorax or rapidly collecting intrapleural fluid, which would indicate haemorrhage, and he is then returned to his room. Postoperatively, the patient is kept in bed for the remainder of the day, and pulse and blood pressure readings are checked every four hours. Antibiotics are not administered unless the procedure is followed by fever. On the second day the patient resumes his usual activity. All the patients have tolerated the procedure without untoward incident.

Chronic Hyperventilation Syndrome

LEWIS (*J.A.M.A.*, **155**: 1204, 1954) gives in the following lines the summary of his observation:

Hyperventilation syndromes are common. Generally, they have a chronic course that features recurring acute exacerbations. An analysis of 50 consecutive cases emphasises the tendency of the symptoms to stimulate grave organic disease. The syndrome is caused by organic or psychogenic factors or combinations of both.

The initial pathogenic step is prolonged overbreathing. The resultant carbon dioxide deficiency induces wide-spread biochemical, neurovascular, and neuromuscular changes. In turn, these evoke a psychic response of apprehension that accentuates and perpetuates the hyperventilation. This response tends to establish a chronic cyclic process.

The patient's complaints implicate the cardiovascular system most often. Neurological, musculoskeletal, gastrointestinal, respiratory, and psychiatric symptom complexes are less frequently encountered. Peripheral paresthesias are the most consistent symptoms, and disordered breathing is the commonest sign. These are, however, seldom prominent features. A high index of suspicion is necessary to detect the subtle diagnostic clues.

Diagnosis is confirmed by inducing an acute exacerbation of the typical syndrome with a few minutes of voluntary overbreathing. The attack is ended by a similar period of rebreathing from a paper bag. Treatment begins with these procedures. The dramatic reduplication and resolutions of the attack enhances the important physician-patient relationship. They help the patient understand the nature of his illness. They give him an effective method for controlling any future attacks. Concurrent organic disease is seen in its proper perspective and handled accordingly. Appropriate explanation and reassurance reenforces these measures. Often this is all that is necessary to restore the patient to his previous state of good health. In any event, the way is paved for additional therapeutic manoeuvers.

Spontaneous Regression of Glands in Hodgkin's Disease

JOHNSTON (*Brit. M. J.*, **1**: 916, 1954) writes that in view of the recent emphasis on the treatment of Hodgkin's disease, it is timely to remember that enlarged glands may regress spontaneously. Three cases are reported in which such regression occurred and references are made of others collected from a survey of the hospital records.

In the first patient the regression was so striking and the restoration to apparently normal health so remarkable that the diagnosis was doubted even though supported by a gland biopsy. Only after a recurrence was it accepted. Shortly afterwards the second patient was admitted with a similar story. Meanwhile the diagnosis in the third patient had passed through a similar cycle to that of the first.

A review of the records of the Royal Victoria Infirmary from 1948 to 1952, inclusive, revealed 29 acceptable cases in which there was the occurrence of this phenomenon. All underwent biopsy or necropsy. Five showed it clearly and six less definitely.

The cursory attention that this occurrence receives in the literature is noted; there is no evidence that elimination of secondary infection, adduced as a possible explanation, is responsible.

It is submitted that regression of the glands in Hodgkin's disease, often associated with an alternating fever, is an occasional but important variant of its natural history.

Local Effects after BCG Vaccination

COLLISON (*New Zealand M. J.*, **53**: 170, 1954) in presenting 10 cases of tuberculous lymphadenitis following BCG vaccination stresses on the fact the bacillus Calmette-Guerin can cause an inflammatory reaction, eventual caseation and abscess formation in both the inoculation site and the lymph nodes draining the area. In all the glands affected were the anterior axillary or the infraclavicular, the vaccination site being in the deltoid region of the left arm. In many cases the adenitis followed months after the vaccination site had healed. The systemic upset in most cases was slight but the course of the condition was prolonged. In all the ten cases studied there was a typical tuberculous tissue reaction with caseation, giant cell and epithelioid systems. In 4 cases acid-fast bacilli were found on direct examination of either tissue or pus and in one case the acid-fast bacilli were cultured and found to be inocuous to guinea pigs both from injection of the pus and from inoculation of the cultured organisms.

It is considered that apart from poor technique or pyogenic infection as a cause vaccination ulcers leading to adenitis are protective to some degree in that it is a primary infection with a relatively avirulent rather than a virulent strain of tuberculosis.

The most satisfactory and economic method of treatment was radical excision of the affected area.

Digitalis Intoxication

In the following lines are given the major points that have been brought out in the conference on digitalis intoxication arranged under the supervision of the Deans Committee of the five medical colleges in New York:

(1) Digitalis intoxication is quite common, particularly since the potent cardiac glycosides have come into general use.

(2) The main reasons for the occurrence of toxicity are: (*a*) narrow therapeutic range of digitalis; (*b*) lack of appreciation of early toxic signs and symptoms; (*c*) belief that all patients require the same digitalizing and maintenance dose, thus disregarding evidence that there is a wide dosage range from patient to patient; (*d*) the use of a glycoside (such as digitoxin) with a long latent period and a long period of dissipation; lack of appreciation of these properties of this glycoside may result in toxicity when divided doses are given at too short intervals in initial digitalization, or too high a maintenance dose is used causing accumulation later.

(3) Digitalis intoxication may be indicated as follows: (*a*) gastrointestinal symptoms due both to local and central effects; (*b*) central nervous manifestations; (*c*) effect on the heart itself, such as abnormal rhythms, the most serious of which is ventricular tachycardia; also, there is some evidence that damage to heart muscle may result and heart failure may be induced by digitalis toxicity. Auricular fibrillation may be a sign of digitalis toxicity in a patient who has previously had a regular heart rhythm.

(4) Idiosyncrasy to digitalis may occur but is rare.

(5) The treatment of digitalis toxicity consists of the following measures: (*a*) stop all digitalis medication if toxicity is suspected; (*b*) treat ventricular tachycardia induced by digitalis by pro-sine amide; it is to be emphasized, however, that this drug must be used with great care since it can of itself produce serious toxic effects; (*c*) cases of digitalis intoxication associated with hypopotassemia may be helped by the administration of potassium (*Circulation*, **9**: 118, 1954).

Phenylbutazone and Uric Acid Metabolism

MASON (*Brit. M. J.*, **1**: 788, 1954) writes that there are two possible effects exerted by phenylbutazone and influencing uric acid estimations: (1) uricosuric—while this is no more than a mild effect it is nevertheless sufficient to account for the observed fall in circulating urate levels; and (2) water retaining—this was sufficient to precipitate congestive heart failure in the one case in which a uricosuric effect was not observed.

It is suggested that the variable preponderance of uricosuric and water-retaining effects would account for the variable findings. Much further evidence is required to establish still a third effect, on uric acid metabolism itself; and the fact that uric acid excretion may be increased when phenylbutazone is administered is against such a possibility.

Four cases of gout and one control case were treated with phenylbutazone and the changes in plasma uric acid and urinary uric acid levels were studied.

The findings suggest that phenylbutazone has no more than a slight uricosuric effect. This may be neutralized if considerable water retention occurs at the same time.

No evidence was found that phenylbutazone has any direct effect on uric acid metabolism.

Effects of Phenylbutazone in Hepatic Disease

WEINER AND OTHERS (*Am. J. M. Sci.*, **228**: 36, 1954) write that the rate of biotransformation of phenylbutazone by 10 patients with far-advanced cirrhosis was not found to be significantly different from that of normal subjects.

In 9 cirrhotic patients maintained on phenylbutazone therapy for 1 to 5 months, there was no evidence of further impairment of liver function.

Severe cirrhosis does not significantly alter the rate of phenylbutazone biotransformation. The experiments reported here show no evidence of any hepatotoxic effects due to phenylbutazone.

CURRENT TOPIC

Dr. M. G. Candau, Director General of the World Health Organisation is now on a three-week visit to Member Countries of WHO in S. E. Asia. In India, he was on his first official visit from November 16-25, 1954.

Dr. Candau delivered his first lecture at Delhi on "WHO and The Modern Concept of Public Health" before the Delhi Medical Association. His next lecture was delivered at Baroda on "The Importance of Research in the Progress of Medical Science" at the meeting of the Indian Council of Medical Research. At Calcutta also he spoke before the medical men at the All-India Institute of Hygiene and Public Health.

Dr. Candau was born in Rio de Janeiro, Brazil, in 1911. He obtained the medical degree at the School of Medicine, State of Rio de Janeiro and received special training in Public Health at the University of Brazil and at Johns Hopkins University, Baltimore, U.S.A. In 1934, he entered the public service of his country and occupied a series of increasing important positions in Brazil. He is also the author of several scientific papers covering a wide range of subjects. He joined the staff of the World Health Organisation in 1950 and became the second Director General in 1953.

Following is the text of his lecture given at the Delhi Medical Association on November 20, 1954.

WHO AND THE MODERN CONCEPT OF PUBLIC HEALTH

M. G. CANDAU,

Director-General, World Health Organisation.

It is a pleasure for me to be with you this afternoon. I only wish that I had more time to spend with you and with associations like yours all over India. For we, in the World Health Organization, fully recognize the critical importance of our link with the medical profession of each Member Country. Although WHO is an inter-governmental organization and its work is therefore largely channelled through each country's governmental health services, we are well aware that for the achievement of our aims they and we depend very greatly on the medical practitioner everywhere.

The basic objective of the World Health Organization, which has now achieved a membership of 84 countries, is to assist these countries in the orderly development of their essential health services so that, as stated in the WHO Constitution, the highest level of health can ultimately be reached by people everywhere.

This concept of public health, which is the foundation of WHO'S work, is a relatively recent one. In order fully to understand it, it might be useful to summarize several of the factors which led to its emergence.

The first fact which comes to one's mind in examining the history of medicine is that *curative* health measures were everywhere introduced first; *preventive* measures being introduced much later and, in some countries, even at present being still relegated to a secondary position.

The very definition of health in the WHO Constitution as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" demonstrates the importance the World Health Organization attaches to the *preventive* aspects of public health work.

Apart from the Central Technical Services of WHO, and the campaigns against specific diseases, to which I shall refer later, the increasing number of activities carried out in such fields as maternal and child health, environmental sanitation, nutrition, health education of the public, etc., bears witness to the Organization's conviction that to assist member countries in long-term planning for positive health is its primary duty.

DR. MARCOLINO GOMEZ CANDAU,
DIRECTOR-GENERAL, WORLD HEALTH ORGANISATION.

Another fact which emerges from the study of the history of medicine is that public health measures have developed gradually and haphazardly, subject to no overall long-term planning, and not even always according to the best standards of public health practice then obtaining. Equally, subsequent improvements were often introduced in a haphazard fashion and their nature was sometimes coloured by extra-medical considerations, such as popular prejudice or political or economic factors. The resulting structure, in many cases, was complex and unwieldy and both less efficient and more expensive than it might have been had its development been carefully planned from the start. Of course, because of lack of knowledge and experience, such planning was hardly possible until recent times. Now, however, the experience gained in the medically more advanced countries should be made available to the many countries in the world which are still in an earlier stage of development of public health. One of the main functions of the World Health Organization is to do precisely this, and to help the medically less advanced countries to avoid repeating the mistakes made by others in developing their public health services.

One tendency which must be resisted is to plan health services on a short-term basis only, and considering merely immediate needs and resources. Efficient long-term planning is essential and implies foreseeing some of the problems likely to arise in the future and to ensure that the measures adopted at any given time are capable of modification as conditions change and resources increase. This is not an easy task, but, here again, the world history of medicine during the last century can give us useful guidance.

I am sure that all of you are aware of the important changes which have taken place in the public health practice of the medically more advanced countries. One interesting fact is that as soon as one set of public health problems was overcome, another emerged which, when overcome in its turn, was replaced by a further set. For example, the control of intestinal infections such as cholera and typhoid fever, and the virtual elimination of smallpox, unmasked the relative importance of bacterial infections like diphtheria, scarlet fever, pneumonia and others. These again were replaced as major health problems, by diseases, such as cancer, rheumatism and arteriosclerosis, as well as the virus diseases, such as influenza, poliomyelitis, hepatitis, and others, and also accidents. Another factor which exercised an influence on the changing pattern of public health problems was the progressive prolongation of life and the changes in the age structure of populations.

Modern public health practice also owes a great debt to the laboratory. Its achievements would have been impossible without the discovery of new weapons to fight disease, including chemotherapeutic agents, the antibiotics, improved prophylactic agents such as vaccines against yellow fever, typhus, diphtheria etc. and the insecticides.

For example, the importance of venereal diseases as a public health problem has practically vanished in some countries owing to the planned and systematic use of penicillin therapy. In considerable areas malaria has ceased to be a universal danger to health, thanks to the methodical application of the technique of spraying with new insecticides, such as DDT. Communicable diseases of childhood, such as diphtheria are, to a great extent, under control because of systematic vaccination campaigns carried out by the public health services.

But the most important development in the history of world medicine, and the one to which WHO owes its very existence, was the shift from a national to an international outlook in the fight against disease. In fact, it was at quite an early stage of the development of public health practice that many countries recognized that disease is no respector of frontiers and, in order to achieve decisive results, has to be attacked on a world-wide basis.

The real beginnings of organized international cooperation in the field of health are generally identified with the creation in Alexandria in 1831 of the Conseil Sanitaire Maritime et Quarantenaire d'Egypte. The purpose of this Egyptian Quarantine Board was exclusively defensive; it was an expression of willingness on the part of a number of governments to join forces in combating pestilential diseases.

Mutual assistance in the fight against epidemic diseases of regional importance was also the primary purpose of the Pan American Sanitary Bureau, created in 1902.

There are generally two reasons which are advanced for considering the Office International d'Hygiene Publique, established in 1908 in Paris, as the doyen d'age of world health organizations. In the first place, through its membership, which covered several continents, the Office was certainly the first organization to acquire a significantly universal character. Secondly, the Office did not limit itself purely to the handling of "quarantine" problems arising from the so-called "Convention" diseases. Indeed, the Office dealt with a great variety of other health subjects, such as malaria, venereal diseases, tuberculosis, leprosy, water supplies, hospitals, etc. But it was the Health Organization of the League of Nations which initiated many of the practices which made it possible for WHO to adapt its methods and techniques to the conditions of our modern world.

Let me give you some examples. International work on biological standards goes back to the early years of the Health Organization of the League. The first standard for diphtheria antitoxin was established in 1922. By 1939, the number of standards had gone up to 30.

The great importance attached by WHO to biological standardization is indicated by the following facts: at the end of 1953, the number of standards amounted to over 60, including 7 different antibiotics.

While out of 34 standards established by 1945, there was only one—the old tuberculin—designed for diagnostic purposes, it is expected that, within a relatively short time, diagnostic standards will amount to nearly one-third of the 88 standards to be available.

In publishing the first volume of the International Pharmacopoeia in 1951, and completing the second volume during 1954, WHO successfully developed another initiative taken by the League. It is the hope of WHO that, ultimately the acceptance of the International Pharmacopoeia will be a world-wide one.

Following the advice of a series of Expert Committees on pestilential diseases and on quarantine it was possible to adopt in 1951 one set of regulations to replace the six sanitary conventions dating back from 1912 to 1944. This new set of regulations not only protects countries against the spread of pestilential diseases but—perhaps even more important in this age of speed—facilitates enormously international trade and travel.

Thanks to WHO, international health statistics, originally a mere by-product of epidemiological information, have now come into their own. In addition to collecting, compiling and publishing essential health and vital statistics available today, WHO plays an important role in the improvement of the international comparability of such statistics.

Under the aegis of WHO, some 30 national committees on vital and health statistics have been created to co-ordinate statistical work done at the national level, and to establish a link between the WHO Expert Committee on Health Statistics and the many national administrations concerned.

Speaking of committees, I would like to mention here that the Technical Commissions the League had set up to study malaria, tuberculosis, venereal and other diseases, can be considered as the fore-runners of the many expert committees which today are providing WHO with invaluable advice on a host of problems relating to public health.

I think that I have said enough to show that, in absorbing and combining the work of preceding health agencies into that of a single inter-governmental body, WHO has been successful in maintaining and in further developing what is generally considered as "pure" international health work, relating to standardization and to epidemic control. There can be no doubt that, in doing so, WHO has assumed full responsibility for a multitude of tasks which can only be carried out adequately by a world-wide organization, and which, at the present stage of technical development, constitute a minimum requirement for any concerted effort to combat and prevent disease on an international level.

In assisting member governments to undertake campaigns against specific diseases and other health problems, in the form of field demonstration projects against such diseases as malaria, tuberculosis, venereal disease, etc. WHO continually keeps in mind its objective of strengthening national health administrations.

In some cases specific pilot projects are established for developing integrated health services, in which the installation of sewage disposal and water supply systems, which are now a first priority of the WHO environmental sanitation programme, play a prominent part. Neither is the educational aspect of field demonstration projects neglected. They serve as training schools both on the national and regional level and this aspect has become so highly developed that, during 1954, about 40 per cent of the total number of field projects was mainly concerned with education and training in one or more health subjects.

How much these projects are appreciated by member states is demonstrated by the extraordinary growth in their number, despite WHO's severe budgetary limitations. For example, during 1954, nine new demonstration and training projects were launched in maternal and child health, while twenty others continued from previous years. During the same year, malaria control projects assisted by WHO were in operation in eighteen different areas of the world. By the end of 1954, in campaigns against endemic treponemal diseases (including yaws, bejel and pinta) more than 25 million people will have been examined and six million treated. In one year alone—1954—32 million young people are being tuberculin-tested, of whom about 11 million are being vaccinated with BCG, to enhance their immunity against tuberculosis. These are among the projects with which WHO has been concerned since its inception in 1948.

But the demands for its services are insatiable. WHO has launched out to aid campaigns against trachoma, bilharziasis and other diseases of mass dimensions during recent years. And no doubt, in time to come, as these primary health problems are beginning to be overcome by national health administrations, others will arise and claim our attention. We are still a long way from our goal of achieving the objective I quoted to you, which forms the first and shortest chapter of our Constitution and which reads in full: "the objective of the World Health Organization shall be the attainment by all peoples of the highest possible level of health". Towards the attainment of this objective, not only WHO but the general medical profession of each country must actively participate. The backbone of the national health services is the ordinary medical practitioner, whose active interest and co-operation is essential for the success of national health campaigns, large or small, curative or preventive. Medical associations, such as yours, can be the obvious medium for such mutual co-operation.

NOTES AND NEWS

International Congress of Psychology

The 13th International Congress of Psychology was held in Stockholm in July 1951. The total membership consisted of 1021 persons from 31 countries. Six psychologists came from U.S.S.R. The topics for the sessions were selected with great care; for example, the clinical papers stressed the scientific implications of clinical data rather than the improvement of clinical procedures. The congress was considered a great success, chiefly because of the programme which might well serve as a model for the future. There was a long list of symposiums which exemplified the scope and interest of the programme.

In the symposium on "Cerebral functions and behaviour," findings from a variety of approaches (electroencephalographic, experimental-surgical, therapeuto-surgical, and clinical) and their theoretical implications were considered. H. H. Jasper (McGill) gave a paper on "Correlates between psychological processes and the electrical activity of the brain"; H. E. Rosvold and J. M. R. Delgado (Yale) on "Effects on behaviour of electrical stimulation of the monkey's brain"; A. L. Benton (Iowa State) on "Right-left identification, finger localisation, and cerebral status"; and A. Petrie (London) on "Effects on personality of excisions in different regions of the brain".

Post-Graduate Training in Vienna

In the news published in this Journal (November 1, 1954 issue, p. 119) with the above heading, it was stated that "opportunity of working temporarily as interns at the Vienna hospitals and similar institutions for long and short periods is available after application has been made to the head of the Division". But this has been recently contradicted by WIENER MEDIZINISCHE AKADEMIE FUR ARZTLICHE FORTBILDUNG, Vienna, communicating that "there are no facilities for foreigners to work as an intern in an Austrian hospital."

Commission on Juvenile Delinquency

The All-India Moral and Social Hygiene Conference held at Chandigarh in November 1954 urged the Govern-

ment of India to appoint a commission on juvenile delinquency. The commission would be entrusted with preparation of comprehensive legislation and a manual for juvenile courts, probation, institutional care, after-care and other services. The Conference, by a resolution, urged State Governments to adopt a system of licensing and supervising institutions for women and children, including marriage bureaus, to prevent the exploitation of their wards. It also suggested that State Governments and local bodies should set up adequate clinics to treat venereal diseases where medical advice would be provided free to persons seeking it.

Indian Chemical Manufacturers' Association

Raj Kumari Amrit Kaur, Union Minister for Health, inaugurating the 14th Annual meeting of the Indian Chemical Manufacturers Association in Bombay, called upon the Indian chemical manufacturers to lay greater emphasis on the production of basic chemicals and pharmaceuticals. Although it would mean an investment of large capital, it was imperative that a beginning was made. She further stated that India abounded in medicinal plants and more than 75 per cent of the drugs of vegetable origin mentioned in pharmacopoeias were available locally.

The Government had also contributed its share to the development of basic pharmaceuticals. Apart from undertaking successfully the production of quinine and opium alkaloids, sera, vaccines and shark liver oil, the Government was proceeding apace with the scheme for the manufacture of penicillin, the first consignment of which was expected to be put on the market in 1955. A D.D.T. factory was also nearing completion. Benzene and Toluene would be produced at Sindri. No real purpose can ever be expected in any sphere if each of us is not inspired with an insatiable zeal to serve and sacrifice in order to build a new India. A trained pharmacist, who was bound by the ethics of the profession, would act as a check on unsocial practices, such as the sale of spurious or substandard drugs. The fair name of the pharmaceutical industry would depend on the measures the manufacturers take to control the standards of the raw materials and also of the finished products intended for the market.

Presiding over the meeting, Mr. B. K. Muzumdar pleaded that the conditions should be created to ensure a full protection to the new enterprises. In this context, he commended the comprehensive and practical recommendations of the Pharmaceutical Enquiry Committee and pledged the industry's whole-hearted support in giving effect to the recommendations. He welcomed the amendment to the Drugs Act and centralisation of the powers of administration. He also pointed out that the Association representing the pharmaceutical industry should get its due place on the Drugs Technical Advisory Board.

The Association has published an uptodate survey of the Indian chemical and pharmaceutical industry, presenting a complete picture of its structure, problems and the future. The data presented has been received from various authorities. The survey forecasts the future trend and lays down targets for inclusion in the second Five-Year Plan, now under formulation.

All-India Leprosy Workers' Conference

The Fifth All-India Leprosy Workers' Conference and the Second biennial meeting of the Indian Association of Leprologists will be held at Jamshedpur (Bihar) from the 3rd to 6th February, 1955.

The first two days (3rd and 4th February) will be devoted to the meetings of the Indian Association of Leprologists, which will be open to non-medical workers. The general conference will be held on the succeeding two days (5th and 6th February).

Sri G. V. Mavalankar, Chairman of the Gandhi Memorial Leprosy Foundation and Speaker of the Loka Shava, New Delhi, will preside over the General Sessions of the Conference on the 5th and 6th February, 1955.

The Conference is open to all medical, para-medical, and social workers, directly interested in leprosy or connected with any organisation engaged in or furthering any anti-leprosy work.

During the sessions the following subjects will be taken up for discussion:

(1) Planning and Administration of Leprosy Work.

(2) A Review of the Anti-Leprosy Measures in India.

(3) Mass Education in Leprosy—Methods and Means.

(4) The Value of Surgical and Physiotherapeutic Measures in Leprosy.

(5) Control of Leprosy with Special Reference to Chemotherapy and B.C.G. Vaccination.

(6) Classification.

The members intending to attend the session are requested to communicate with the Secretary, Jamshedpur Leprosy Relief Association, Jamshedpur, Bihar and Hony. Secretary, Indian Association of Leprologists, School of Tropical Medicine, Calcutta 12.

CORRESPONDENCE

The Editor is not responsible for any views expressed by correspondents

Spurious Drug Trade

SIR,—I have perused the letters (*J. Indian M. A.*, **24**: 158, 1954) of Dr. S. K. Roy Choudhury and of Dr. Jatish Ghosh, the former dealing with the causes and psychology of the sale of spurious drugs, and the efforts of the Calcutta Corporation, the West Bengal State Government and the Union Government in preventing this spurious trade; and the latter expressing his intention to move the provincial legislature recommending grant of licenses only to Registered Medical Practitioners and authorised chemists.

I want to draw the attention of the public, the profession and the States to the role of the Sales Tax as one of the important causes of thriving of trade in spurious drugs. A large number of chemists and druggists make their purchases from the market to avoid sales tax and to beat down their competitors by underselling. A few others, disgusted with railway pilferage and irregular and delayed supply from manufacturers and distributors are

forced to make similar purchases. Such purchases are hazardous and inspire the blackmailers to flood the market with spurious drugs.

Drugs are life-saving and no Government should bargain on the sale of medicines. So long as the evil remains, we have to reconcile with it and should make our purchases by cash memo with payment of due sales tax. But it is high time that the Government should either exempt medicines from sales tax or impose it at the site of manufacture or import so that dishonest tradesmen cannot escape sales tax. Once this is done, the prices will be uniform and chemists will no longer be tempted to make bazar purchases. The Railway Government can prevent pilferage by exemplary punishment to the culprits and can facilitate prompt supply by giving preference to the booking of medicines. I am etc.

Benimadhab Pharmacy, K. P. De,
Garhbeta, Midnapur. M.B.

REVIEWS

British Empire Cancer Campaign.—Thirty-first annual report, covering the year 1953. Published from the regd. office of the Secretary General, 11 Grosvenor Crescent, Hyde Park Corner, London S.W. 1.

This is a voluminous report, running to a total of 468 pages, of the very good work done by the various research units (as also of other departments) under the auspices of the British Empire Cancer Campaign. Besides the usual details of various committees in the first few pages, there is a summary of about 20 pages which cover the field of the campaign's ceaseless activities towards the eradication of the relentless disease—cancer, which knows no bounds of race, religion, sex or of geography. The reports in the following pages giving the details of research activities in the various units make a fascinating study of absorbing interest and bring home to the reader the realisation about man's eternal search for truth. This volume must be read by all workers in the field of cancer in any of its multifacet forms.

The Foundations of Surgery—By George Perkins, M.C., M.CH., F.R.C.S. Published by E. & S. Livingstone Ltd., Edinburgh and London. Price 10 sh. net.

Medical students going through ward duties in the surgical side for the first time are very often bewildered by the variety and complexity of the diseases and the patients facing them. The standard text books they are advised to read, seem much too big, and the students often do not know where to make a start. Much valuable time is lost in this way and a good deal of clinical material in the wards pass through unutilised by the students in their early confusion. Professor Perkins must have seen all this repeatedly and must have felt pity for these students. This book is a small volume easily managed in a coat-pocket, and a perusal of it will admirably serve the new entrant in the surgical wards in carefully guiding him to lay sound "foundations of surgery". Recommended to all medical students on duty in the surgical wards—specially if for the first time.

Antibiotik Fibel.—By A. M. Walter and L. Heilmeyer. Publisher: Georg Thieme Verlag. Stuttgart, 1954.

As introduction, a short but comprehensive and very precise survey on general principles of antibiotics and chemotherapeutics is given: the material is arranged in such a way that it permits quick orientation about all important problems in that field; most welcome is in that section also a warning note against uncritical use of "antibiotics-cocktails" as substitutes for careful clinical diagnosis and specific treatment. Although the general title of the book refers only to antibiotics, sulfadrugs are also briefly dealt with. The individual antibiotics (including the most recent ones) are described systematically in the subsequent part, making use of illustrative tables which permit quick clarification of such issues as combination of antibiotics, dosage schedules under various circumstances etc. The book gains further significance for the busy practitioner with a clinical section in which the use of antibiotics and sulfa drugs (together with supportive measures and diagnostic aids) is described in an easily comprehensible way. Carefully selected references at the end of each chapter and a good index increase the value of the book which will undoubtedly be of great value for the practitioner who wants to be up to date in this field of medicine.

Demonstrations of Operative Surgery—A manual for general practitioners, medical students and nurses.—By Hamilton Bailey, F.R.C.S., F.A.C.S., F.I.C.S., F.R.S.E. Second edition, 1954. E. & S. Livingstone Ltd., Edinburgh and London. Price 24 sh. net.

Mr. Hamilton Bailey's books usually have one good quality in common, a profusion of diagrams, sketches and photographs. This book is no exception. The layout of the book is in the form of lectures and demonstrations given in the operation-theatre mainly for the benefit of the nursing staff. The present edition will be useful not only to them, but also to medical students and even to general practitioners having a refresher course at a big general hospital. An interesting feature is the brief description, at the foot of a page, of the surgeon whose name is borne by an instrument described in that page. This arrangement, throughout the book is likely to arouse further interest of the reader. Paper, printing, get up and binding are all very good. Should be read by medical students, housemen and nursing staff.

CORRECTION

Re. "Excerpta Medica Section XVI—Cancer" reviewed in June 1954 (p. 422), the annual subscription rate for 12 issues is £3·15.

Re. "Materia Medica of Pharmaceutical Combinations and Specialities" reviewed in December 16, 1954 (p. 235), the price is Rs. 21/12/-.

SUPPLEMENT
Journal of the Indian Medical Association

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XVIII UTTAR PRADESH PROVINCIAL MEDICAL CONFERRENCE, GORAKHPUR

The 18th Provincial Medical Conference of Uttar Pradesh was held at Gorakhpur on 31 October 1954. Dr. S. C. Banerjee, the Chairman of the Reception Committee accorded hearty welcome to delegates and visitors. In course of his speech, he referred to the quacks and the mischief they were doing to the society. He also suggested the control of the practice of the various systems of medicine. He spoke of the paucity of medical facilities in the district and drew attention of all to the various public health problems existing in the district. He was of opinion that an All India Medical Service should be formed so that this superior service would be an incentive to specialisation and higher training for medical men.

The president of the Conference, Dr. J. L. Carole in his presidential address discussed the various problems of the State. A summary of his speech is given below :

"The question of public health and preventive medicine is being tackled by the Health Department of the Government. Still I believe that every medical man should spare sometime to teach the principles of public health and preventive medicine to his patients and the general public. My branch started a system sometime ago in our city according to which members of our association used to go to the Teaching Institutions to give lectures on public health and preventive diseases. After some lapse we have started this system again. I think this arrangement helped a great deal.

In order that the health of the nation may improve the first requisite is the provision for nutrition and balanced-diet. The second essential thing is house in a healthy locality and the third is work for every individual. Cases of malnutrition due to lack of good nourishment are met in increasing numbers in our day-to-day practice. These people generally fall victim to diseases like T. B., Anaemia etc. Good milk, butter and egg are essential for proper nutrition, but through our bad luck, things which were in abundance formerly, have become rare commodities now. Adulteration of food and drugs is increasing every day and it has become a religion with some rather than a sin. Even the most important life-saving drugs are being adulterated and spurious drugs are being sold as genuine medicines. Our profession must be very careful about this. I am glad to say that our State Government is quite alive to it and is taking steps to stop this evil which is daily on the increase, but stricter measures are required to stamp out this evil.

The foundation of a nation is laid with the infant and the mother and the country which wants to improve in the present age of struggle for existence, must ensure that the life of the infant and the mother is protected by all means and at all costs. The appalling condition of infant mortality which is very high must be an eye-opener to us. Half of the total deaths are amongst children.

The most important work that stares us is the Rural Medical Relief. Our foreign masters established a few dispensaries in rural areas but without any system and plan. The result was the relief given did not touch even the fringe of the population and was of little good.

We have not heard of any definite plan prepared by the Government to build a really good medical relief. The reasons generally given for the failure are stringency of finance and unwillingness on the part of the medical men to go to the villages. We know there is dearth of doctors in our country-side but there is overcrowding in the big cities and they can very well be

Dr. J. L. Carole, the President of the Conference

taken over for the scheme. Let us give a thought and find out the reasons for this disinclination of medical men not to settle in villages. The following are some of the cogent reasons which cannot be lost sight of.

(*i*) Our medical men have got a standard of life and culture which they do not wish to see deteriorate.

(*ii*) They have their duty towards their children and their education.

(*iii*) The question of remuneration which is not adequate to maintain themselves and to educate their children outside.

(*iv*) There are no facilities provided in the villages to keep their knowledge up-to-date.

(*v*) No housing facilities are available in most of the villages.

I have one suggestion to make in this connection and it is of giving stipends to students of Medical Colleges and these stipend-holders when they pass out be required to work in rural areas for three years. This was tried in Russia with success. Most of the civilised nations of the world are spending 16% of their budget on medical relief while in our country most of the states spend 5 to 6% only.

Under the latest All-India scheme, persons of S.L.C. qualifications will be trained in diagnosis and treatment of diseases for a period of two years in recognised medical colleges. I cannot favour such a scheme as it will be creating another class of semi-educated medical men. The life of a villager is as precious as that of any other person in the city.

There are various reasons for the deteriorating standard in hospitals. The hospitals at district headquarters are very much under-staffed and finances are very meagre. The discovery of sulpha and anti-biotic drugs have revolutionised the treatment of the most dangerous and fatal diseases. But the cost is prohibitive and is beyond the means of ordinary men. These medicines are not given in hospitals due to limited means at their disposal. The persons employed are poorly paid with the result that they want to supplement their income. Another drawback is that Government spends miserably low amount on medicines and equipment in the hospitals. The result is that cases go inadequately treated and thus the manner in which hospitals are conducted leads to popular discontent.

The hospitals in Europe and America owe a great deal to the private charity from philanthropic people both for initial cost and for their maintenance. I am sorry this is not so in my country. But I hope that our capitalists and industrialists will rise to the occasion and donate large sums of money for hospitals for relieving the sufferings of the humanity.

I am glad to note that the Government is pursuing the policy of appointing more and more suitable honorary staff in district hospitals. I hope the paid staff will show their utmost courtesy and regard for the honorary staff and give them all facilities.

It is absolutely essential that the doctors posted in village dispensaries should be paid more salary than the doctors in the cities. It should be enhanced by at least 50%.

The thorny question of complete abolition of private practice for doctors in service has been a subject of great comment from our association but the recommendations made have not been implemented. I am of the view that though it may not be possible to implement it in smaller places but it should be started on experimental basis in the case of doctors posted in the cities. Reasonable compensation to doctors in service be given for not allowing them private practice.

Family Planning is the burning topic of the day. In spite of the opposition on religious and moral grounds it is very essential for our country. The great necessity for tackling this problem is due to grave food problem facing India, not to mention other problems such as housing, clothing etc. which make it a national emergency. The control of population through family planning can be done on national programme.

This can be done through reliable and harmless contraceptive methods. Family planning clinics may be started in all the towns and publicity propaganda may be done on a wide scale through news-papers, leaflets and cinema shows. The instructions and advice given in the clinics must be in a thorough way to minimise the percentage of failures. Propaganda slides should be shown in all pictorial houses and lectures should be given on family planning.

Health Insurance Scheme for workers has been started in some big towns but I would suggest extension of the Insurance Scheme for those also who have no work.

Blood donation campaign is to be intensified so that hospitals may have enough blood to run blood transfusion scheme successfully.

X'ray Plant is an essential equipment both for hospitals and private clinics. It is an important aid in diagnosis. I am grieved to find that the Government is charging 33% import duty on X'ray Plants. I respectfully draw the attention of the Government to exempt the import duty on X'ray Plants thus to bring scientific aid within the purchasing power of doctors.

I am sorry to find that sufficient attention has not been paid for starting a refresher's course both for the doctors in service and private practice. This can give an opportunity for brushing up their knowledge. There is enough talent in both the medical colleges in our province for starting refresher's course. For Post-graduate studies our youngmen have to go abroad. I think the medical Universities in India must start Post-graduate qualifications in all the branches and give specialised teaching.

Quackery is very rampant in our country which is endangering the lives of our people. In urban or rural areas where one goes, one finds these quacks playing with the lives of the individuals prescribing sulpha and antibiotic drugs indiscriminately to the detriment to the health of the patient. I request our Government to immediately stop such unqualified persons practising.

In the end I request you all to increase the membership of the Association and forge a steel-framed unity. Ours is not an association of trade-unionists. It is an association of noble professionalists engaged in relieving the sufferings of humanity. It knows no caste, creed or religion and even no territorial barriers. Let us resolve to maintain the high and noble traditions of our profession which our distinguished predecessors have built up and left us as a legacy to follow."

RESOLUTIONS PASSED AT THE CONFERENCE

1. This Conference places on record its deep sense of sorrow at the demise of the following members of the profession in Uttar Pradesh during 1952-53 and conveys heartfelt sympathy to the members of the bereaved families :

(*a*) Captain P. L. Banerji, Faizabad; (*b*) Dr. S. P. Sharma, Banda; (*c*) Dr. R. N. Pathak, Hardoi; (*d*) Dr. B. B. Banerji, Allahabad; (*e*) Dr. A. B. Seth, Banaras; (*f*) Dr. G. N. Kapur, Agra; (*g*) Dr. H. N. Varma, Gorakhpur; (*h*) Dr. B. B. Srivastava, Allahabad; (*i*) Dr. M. L. Kakkar, Allahabad.

2. "This Conference recommends to the State Government to reduce the existing rates of excise duty on spirituous medicines so as to make them available at a cheaper rate."

3. "This Conference requests the Medical Council of India and Inter University Board to recognise medical education on the following lines :

(*a*) The minimum qualification for admission should be Intermediate.

(*b*) The period of medical education should be Five Years.

(*c*) Unnecessary details in subjects imparted at present should be curtailed with special emphasis paid to Tropical medicine.

(*d*) Academic studies should be finished by the end of the fourth year, the final year being reserved for compulsory internship in approved hospitals."

4. "This Conference does not approve the suggestion of making it obligatory for every new medical graduate to serve in rural area for five years as it is against certain vital principles and there is every likelihood of defeating its own object. On the other hand, Government should give stipends to medical students and such students should be asked to serve for a definite period."

5. "This Conference recommends to the State Government to encourage the association of Honoraried in all State or State aided institutions on the lines suggested by the Indian Medical Association."

6. "This Conference recommends to the State Government to provide adequate facilities for pathological and X-Ray examinations in State or State aided Hospitals. This should be free for the poor on the advice of the attending registered medical practitioner and on nominal charges for others.

7. "This Conference requests the Employees' State Insurance Corporation to so amend the constitution of the regional Boards as to give representation to the State Branches of the Indian Medical Association which is the only state organisation representing the profession, on their regional Boards."

8. "This Conference recommends to the State Government to immediately amend the U. P. Medical Council Act on the following lines :

(a) The rights and privileges of the practitioners registered under the Act be laid down.
(b) The existing constituencies of graduates and licentiates be abolished.
(c) The Act and the Council be reconstituted in consultation with the Indian Medical Association.
(d) The President to be elected by the Council itself."

9. "This Conference recommends to the Government to enable it to recruit sufficient number of medical men, in order to extend and render efficient health services, to make service conditions more attractive by

(a) Abolishing various classes of service and having only one class of P.M.S.
(b) The pay scale of these officers should be the same as that of the present P.M.S.I. Service.
(c) Recruitment should be through a competitive examination conducted by Public Service Commission, U.P.
(d) Curative and preventive treatment should be integrated at the periphery as well, as suggested in the U.P. Medical reorganisation and the (Bhore) Committee Reports."

10. While welcoming the reported move of the State Government to observe sanitation weeks during Holi and Diwali, this Conference urges upon the Government to plan their programme in consultation and co-operation with the Indian Medical Association, so as to make it as popular and instructive as possible amongst the masses."

11. "This Conference recommends to the authorities concerned to implement Resolution No. 2 of the Health Ministers' Conference, August 1950, which runs as follows :

"The Committee also recommends that recruitment to the senior administrative posts, the higher research posts and full time senior teaching posts should be made by advertisement on an All-India basis through the Union or State Public Services Commissions as the case may be, without further delay."

12. "This Conference recommends to the State Government not to curtail cadre of services and the expenses on public health but to increase them and fix increasing percentage of State income for the Health and Medical Departments."

13. "This Conference recommends to the State Government to emphasize upon the authorities to invite the co-operation of the Branches of the Indian Medical Association on Hospital Advisory Committees and any lapse on the part of the officers should be looked upon with disfavour and suitably dealt with. The Branches should inform the State Office any deviation from this practice for necessary action.

14. "Resolved that the Government be requested to consult the local residents of a locality about the type of dispensary they want at that place before they decide about opening any new dispensary at a particular place."

15. "This Conference recommends to the Government that the Indian Medicines Registration Act should be so suitably amended that persons registered under that act are not allowed to the use and prescribe drugs of the scientific system of medicine for the use of which they did not have adequate training with particular reference to the drugs *e.g.* Sulpha Drugs, Antibiotics, Narcotics and Hormones, till the institutions in which they had their training are inspected by the Inspectors of the Medical Council of India and found to impart adequate training in the scientific system of medicine. It is further resolved that abovementioned group of drugs may be made unavailable to unqualified medical practitioners and other people without proper prescription from a Registered Practitioner practising scientific system of medicine."

BRANCH NOTES

AHMEDABAD BRANCH —The annual general meeting was held on 25-9-54. Office bearers were elected with Dr. N. M. Vyas as president and Dr. A. P. Shukla as Hony. General Secretary.

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The annual report for the year 1953-54 shows that 56 new members were enlisted. Five general meetings, 19 clinical meetings and 14 managing committee meetings were held during this year. The sub-committee held their meetings regularly. Republic Day and Independence Day, were celebrated. Dr. S. C. Sen, President, I.M.A. paid a visit to the branch on 14-2-54.

ALIGARH BRANCH —A meeting of the branch was held on 25-9-54. Dr. H. D. Rahman presided. Twenty members were present. After the routine business was over, office bearers were elected with Dr. Lekhraj Singh as president and Dr. Mohan Lal as secretary. At the request of the president, Dr. Raj Narain of New Delhi explained the utility of Mass Miniature Radiography.

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The report of the branch for 1953-54 shows that during the year, 13 meetings were held and eight clinical papers were read. Membership increased from 33 to 46.

AMRITSAR BRANCH—Office bearers for the year 1954-55 were elected with Dr. R. K. Malhotra as president and Dr. P. C. Shori as secretary.

ANANTAPUR BRANCH—A meeting of the branch was held with Dr. D. Ramanath in the chair. It was decided to subscribe Journal of the Tuberculosis Association of India and the Journal of Medical Sciences. Dr. T. N. Reddi read a paper on 'The Use and Abuse of Antibiotics'.

BAHRAICH BRANCH—A meeting of the branch was held on 22-8-54 with Dr. G. P. Srivastava in the chair. Fourteen members were present. Discussions were held regarding the 'Mystery Disease', its cause and prevention.

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A meeting was held on 14-9-54 with Dr. G. P. Srivastava in the chair. Nine members were present. An appeal was made for contributions to the flood relief fund.

BEGUSARAI BRANCH—A meeting of the branch was held on 20-10-54 with Dr. K. D. Mullick in the chair. Eleven members were present. Dr. M. N. Sinha narrated his experience of reaction with Urea-Sulphazide injection in a contact of hydrophobia case. Dr. K. D. Mullick discussed whether toxaemia, Vitamin C deficiencies, calcium lack or platelet reduction could be the cause of the intractable bleeding in a case of eclampsia and placenta previa in a pregnancy of advanced age. Dr. M. Akhter narrated how eosinophilia which did not respond to arsenicals responded to antitubercular treatment.

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A meeting of the branch was held on 17-11-54 with Dr. K. P. Singh in the chair. Fifteen members were present. The question of having a building of the association was again considered. In the hydrophobia contact case discussed in the last meeting, antirabic treatment was advised.

BANARAS BRANCH—The annual report of the branch for 1953-54 shows 124 members on the roll as against 110 members in the previous year. Seventeen general meetings including clinical meetings were held and 16 council meetings were held, during the year. The branch started a monthly magazine in popular Hindi "Apka Swasthya" from October 1953. Certain alterations and amendments were made in the Rules and Bylaws of the branch during the year.

BERHAMPORE (GANJAM) BRANCH—A meeting of the branch was held on 25-10-54. The members appreciated and wholeheartedly supported the appeal by the secretary of the Tuberculosis Association of India for the 5th T. B. Seal Campaign. There are other philanthropic bodies and in raising fund, in the opinion of the members, it was desirable to combine.

BHAVNAGAR BRANCH—The annual general meeting of the branch was held on 9-11-54. The annual report was adopted. Office bearers were elected with Dr. M. A. Trivedi as president and Dr. P. S. Oza and Dr. M. S. Shah as secretaries.

BHUBANESWAR BRANCH—The annual meeting of the branch was held on 22-10-54. The annual report and the annual account were confirmed. Office-bearers for the year 1954-55 with Dr. K. N. Mishra as president and Dr. S. C. Nag as Hony. Secretary. Referring to the recent death of a patient by penicillin injection, Dr. K. N. Mishra explained that this might be due to 2 factors, (1) Anaphylactic Shock, (2) Puncture of a vein and injection of the material into the blood-stream causing syncope.

BIKANER BRANCH—The annual report of the branch for the year 1953-54 shows that 10 meetings were held during the year. Interesting medical and surgical subjects were discussed. Technical and scientific film shows were also held during the year.

BOKARO BRANCH—The annual general meeting of the branch was held on 26-9-54 with Dr. S. N. Banerjee in the chair. Office-bearers for 1954-55 were elected with Dr. P. R. Bhattacharya as president and Dr. A. B. Roy as secretary. The accounts for 1953-54 were approved.

CALCUTTA BRANCH—The 10th ordinary meeting of the branch was held on 14-9-54 with Dr. N. N. Munshi in the chair. Twenty-two members were present. At the outset, the members condoled the tragic death of Dr. Prafulla Kumar Ganguli. Twelve new members were admitted from October 1954, ten members were also enlisted from April 1954. An election sub-committee was formed. November 20, 1954 was fixed for holding the next election and necessary arrangements for this election were directed to be made. The desirability of enhancing the rate of subscription was put off for consideration at the next annual general meeting.

CHITALDROOG BRANCH—A meeting of the branch was held on 23-10-54 with Dr. A. Seethavama Iyer in the chair. The following cases were reported. (1) Dr. M. Rajeswari on Splenomegaly and Rhinoscleroma, (2) Dr. M. R. Jayaseclareddy on Typhoid, (3) Dr. G. Suryanarayana Rao on Erythrocyte sedimentation rate, (4) Dr. Jyothi on Imperfect Anus. Interesting radiogram demonstration was also held.

DALSINGSARAI BRANCH—The annual meeting of the branch was held on 6-11-54. Office bearers for 1954-55 were elected with Dr. B. Upadhya as president and Dr. S. C. Majumdar as hony. secretary.

DALTONGANJ BRANCH—A general meeting of the branch was held on 24-9-54. Twenty-three members were present. Office bearers for the 1954-55 were elected with Dr. S. A. Muzaffar as president and Dr. A. D. Chakravarty as secretary.

DEORIA BRANCH—A meeting of the branch was held on 29-8-54 with Dr. S. C. Acharya in the chair. Two cases were demonstrated. Immediate attention of the State Government was drawn to the increasing "Monkey menace" in the locality.

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The annual general meeting of the branch was held on 10-10-54 with Dr. S. C. Acharya in the chair. The annual report was read and adopted. Office bearers for 1954-55 were elected with Dr. S. C. Acharya as president and Dr. B. P. Mahendra as secretary.

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A general meeting of the branch was held on 28-11-54 with Dr. S. C. Acharya in the chair. It was decided that to give relief to the rural public, meetings would be held regularly in rural areas. The railway authorities were requested to equip Deoria Sadar Station with invalid chairs and stretchers for the patients coming to the hospital from outside.

DIBRUGARH BRANCH—A meeting of the branch was held on 23-10-54 with Dr. P. N. Ghosh in the chair. Eleven doctors were present. The meeting placed on record its deep sense of sorrow at the death of Dr. C. C. Mitra, a member of the branch.

ERODE BRANCH—A meeting of the branch was held on 18-9-54 with Dr. N. C. Kuppusamy in the chair. Dr. K. R. Hariharan spoke on "Macrocytic Anaemia of Infancy and Childhood". Twenty doctors were present.

GHAZIPUR BRANCH—The annual report of the branch for 1953-54 shows that 14 meetings were held during the year and eleven clinical papers were read and discussed in the meetings. The annual meeting of the branch was held on 25-9-54 and office bearers were elected with Dr. D. N. Varma as president and Dr. S. H. Ahmed as secretary.

GIRIDIH BRANCH—A meeting of the branch was held on 20-11-54 with Dr. N. Hussain in the chair. Thirteen members were present. The meeting expressed its thanks to the Editor, Indian Medical Forum for supplying a copy of the Journal, free of cost. The meeting welcomed the scheme of Hony. School Health Service as outlined in the recent circular from the State Secretary. The meeting strongly urged on the State Branch to begin the official year from 1 January or 1 April. The office bearers of the State Branch were requested to make periodical contacts with the various local branches for mutual understanding and co-operation.

GORAKHPUR BRANCH—A meeting of the branch was held on 18-11-54. Dr. Biswas presided. Thirty members were present. A case of Intracranial Tumour

with Papilloedema was demonstrated by Dr. Chatterjee and a case of Burgners disease by Dr. K. N. Varma. The meeting expressed its great concern over the steadily degrading sanitary condition of the town. Considering the alarming increase of incidence of Tuberculosis in the city, the members throught it necessary to have a Tuberculosis Hospital immediately.

GUNTUR BRANCH—The annual general meeting of the branch was held on 9-10-54 and office bearers were elected with Dr. M. Muniswamy as president and Dr. G. V. Hanumantha Rao as secretary.

GURGAON BRANCH—A meeting of the branch was held on 24-10-54 with Dr. S. Singh in the chair. Nineteen members were present. The question of quackery was discussed and in the opinion of the members, the Indian Medical Association should take up the matter in right earnest. It was decided that members of the Association should be trained in B.C.G.

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A meeting of the branch was held in Safdar Jang Hospital on 28-11-54 with Dr. Santokh Singh as president. Twenty-four members were present. Dr. Suraj Parkash of the Polio Ward of the Hospital demonstrated interesting cases and explained the modern treatment of Poliomyelitis.

HARDWAR BRANCH—The annual meeting of the branch was held on 19-11-54. Dr. S. L. Bhaduri presided. The report of the year 1953-54 was adopted. Office bearers were elected with Dr. P. L. Dube as president and Dr. N. B. L. Mathur as Secretary.

HOOGHLY, CHINSURAH, CHANDERNAGORE BRANCH—The annual general meeting of the branch was held on 27-11-54. Seventeen members were present. The annual report of the Secretary was adopted. Office bearers were elected with Dr. M. H. Mukherjee as president and Dr. K. C. Mallik and Dr. S. Sett as hony. joint secretaries.

HUBLI BRANCH—In response to the I. M. A. President's appeal for contributions to the I. M. A. Flood Relief Fund, the members arranged a cricket match which was played by two teams captained by Dr. Miss S. Mahajan on one side and Dr. Mrs. S. Bhagawat on the other. The teams were selected from the members and they played in all seriousness. Dr. (Miss) Mahajan's team won the match by 3 runs. Total collections amounted to Rs. 801/-. The photo shows the playing members.

HYDERABAD BRANCH—In a general meeting of the branch held on 28-10-54, office bearers were elected with Dr. R. V. Rao as president and Dr. Satchidanand as secretary.

JAGADHRI BRANCH—The annual function of the branch was held on 1-12-54 with Dr. S. Herbert in the chair. The annual report for 1953-54 was adopted. Regular monthly clinical meetings were held during the last year. Dr. S. Herbert was elected the president of the branch for 1954-55.

JAHANABAD BRANCH—The annual conference of the branch was held on 31-10-54. Fifteen doctors were present. Dr. S. S. Lall was elected president and Dr. R. L. Vermas as Hony. General Secretary for the year 1954-55. The annual report was adopted. The government and the Indian Medical Association were requested to take drastic steps to check quackery. The meeting condoled the death of the Hon. Rafi Ahmed Kidwai.

KANPUR BRANCH—The annual general meeting was held on 14-11-54. One hundred and twenty members were present. It was decided to celebrate the Silver Jubilee of the Association after January 1955. The audited report was adopted. Office bearers were elected with Dr. R. S. Dixit as president and Dr. Mrs. M. Mathur as Hony. Secretary. The annual report for the year 1953-54 shows slight increase in membership. There were 3 ordinary meetings and 17 clinical meetings. Five films were shown during the year. The financial position is satisfactory. Twentyone magazines and 6 books were added to the library.

KHARAGPUR BRANCH—The annual general meeting of the branch was held on 28-8-54. Twentyone members were present. Office bearers for 1954-55 were elected with Dr. A. S. Arora as president and Dr. A. L. Saha as Secretary. The annual report for the year 1954 shows the following notable activities of the year (1) Adoption of Constitution, (2) Better financial position and no liabilities, (3) Maximum number of clinical meetings, (4) Formation of membership register.

KISHANGANJ BRANCH—The annual meeting of the branch was held on 22-10-54 with Dr. S. Kumar in the chair. Office bearers for 1954-55 were elected with Dr. S. Kumar as president and Dr. N. G. Das as Hony. Secretary.

KOTALPUR BRANCH—A meeting of the branch was held on 30-10-54 with Dr. M. M. Ray in the chair. Twenty members attended. Dr. M. M. Roy was elected president and Drs. M M. Karmakar and M. N. Mal joint secretaries for the session.

KOTHAGUDIUM BRANCH—The annual meeting of the branch was held on 15-11-54 with Dr. T. C Ramchandani in the chair. Ten members were present. Office bearers were elected with Dr. T. C. Ramchandani as president and Dr. S. Vaidyanathan as hony. secretary. The annual report and accounts for the past year were adopted. During the year 13 clinical meetings and 5 administrative meetings were held.

KOZHIKODE BRANCH—A meeting of the branch was held on 27-11-54 with Dr. C. V. Narayana Ayyar in the chair. Dr. C. K. Menon spoke on "Headache and Head Pains". The president appealed to the members to help the Tuberculosis campaign by selling T. B. Seals.

KUTCH PROVINCIAL BRANCH—The annual general meeting of the branch was held on 7-11-54. Dr. M. M. Dalal presided and 17 members were present. Dr. S. B. Dhruv read a paper on "Tetanus". Dr. V. P. Dandekar read a paper on "Pulmonary Eosinophilis and Dr. S. V. Sathe on "Hospital Administration". Office bearers for 1954-55 were elected with Dr. M. M. Dalal as president and Dr. H. J. Chauhan as secretary.

LUDHIANA BRANCH—The anunual meeting of the branch was held on 10-10-54. Office bearers for 1954-55 were elected with Dr. B. L. Kapur as president and Dr. M. R. Tuli as hony. secretary. The annual report of the branch for 1953-54 shows that during the year 5 ordi-

nary meetings, 2 executive committee meetings and one health sub-committee meeting were held. Four scientific meetings were held on various clinical subjects. Dr. Scovel spoke on "Atomic Medicine"; Dr. C. Taylor on "Synergism and Antagonism"; Dr. Ormond on "Urological Problems" and Dr. Chhabil Das on "Food as Medicine". There was a slight decrease in membership. Dr. S. C. Sen visited the branch on 27-3-54.

MADRAS STATE BRANCH—An executive committee meeting of the branch was held on 15-10-54. After the routine business was over, the secretary gave an account of his interview with the Ministers, Sri A. B. Shetty and the Raja of Ramnad regarding the building site. Twelve new members were admitted. The draft annual report was approved. The proposed change in the Rules to give one representative on the Central Council for every 100 members was accepted. The final opinion on the use of Approved Stamp for International Certificates was deferred.

MADRAS CITY BRANCH -The annual general body meeting of the branch was held on 2-12-54. Office bearers were elected with Dr. M. Santhosham as president and Dr. V. Vijiaraghavan as hony. secretary.

MADURA BRANCH—A meeting of the branch was held on 28-8-54 with Dr. A. S. Annamalai in the chair. Eightytwo members were present. Dr. Mahadevan, Professor of Surgery, Madras Medical College delivered a lecture on "The Changing Ground of Surgery" which was greatly appreciated by the members.

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A monthly meeting of the branch was held on 30-9-54 with Dr. A. S. Annamalai in the chair. Dr. I. B. Sculter of the Christian Medical College, Vellore, delivered a lecture on Bone Tumours. She illustrated her lecture with a number of radiographs.

MAHABUBNAGAR BRANCH—A clinical meeting of the branch was held on 11-5-54 under the presidentship of Dr. Feroz Hussain. Dr. Surfaz Khan spoke on 'Mucopurulent Conjunctivitis' as a cause of blindness and Dr. J. B. Simon spoke on Gonococcal Arthritis.

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A meeting of the branch was held on 13-6-54 with Dr. Feroz Hussain on the chair. Dr. J. B. Simon spoke on a case of Diaphragmatic Pleurisy, Dr. Madhav Rao spoke on a case of Tumour of the Vulva weighing 17 lbs.

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A meeting of the branch was held on 25-7-54 under the presidentship of Dr. Feroz Hussain. Dr. Bhaktawatsalam spoke on "General Management treatment of Typhoid". The members gave a send-off to Dr. Subhan, an active member of the branch, who was under transfer order.

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A meeting of the branch was held on 24-9-54. Dr. Bhushan Rao of the Osmania Medical College spoke on "Medicolegal Problems."

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At a meeting of the branch held on 7-11-54 members elected Dr. Feroz Hussain as President and Dr. Raj Purohit, as Secretary for the year. Dr. Raj Purohit spoke on "Maternal Mortality".

MANDYA BRANCH—A meeting of the branch was held on 31-10-54 with Dr. K. Sundaresan in the chair. Dr. Adhikesavalu spoke on "Abdominal Pains" and Sri Anantasakavappa on "Medicolegal Snags".

MIRAJ BRANCH—The annual meeting of the branch was held on 15-9-54. Office bearers were elected with Dr. S. D. Arawattigi as president and Dr. M. S. Karandikar as Secretary.

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A clinical meeting was held on 1-12-54. Dr. S. D. Arawattigi presided. Dr. T. Takaro and Dr. A. G. Fletcher presented a case of a foreign body in the left bronchus needing pneumonectomy. Dr. A. N. Gaikwad presented a case where scrotal skin and skin over penis were completely severed off in an accident. The case was successfully treated by Plastic Surgery. Dr. J. R. Donaldson presented cases of bone tumours.

MONGHYR BRANCH—The annual meeting of the branch was held on 20-10-54 and office bearers for 1954-55 were elected with Dr. D. N. Roy as president and Dr. B. Datta as hony. secretary. The annual report of 1953-54 shows that 11 meetings were held during the year and the attendance of members was satisfactory. In some of these meetings, clinical subjects were discussed.

MORADABAD BRANCH—The annual meeting of the branch was held on 7-11-54 with Dr. J. S. Agarwal in the chair. Twentyeight doctors were present. It was decided to raise the subscription from Rs. 18/- to Rs. 24/- per year to be payable in advance every six months. Dr. Bhattacharya initiated a symposium on Medical Emergencies in which several members took part. Office bearers for 1954-55 were elected with Dr. J. S. Agarwal as president and Dr. K. P. Mehra as secretary.

MUZAFFARNAGAR BRANCH—A general meeting of the branch was held on 10-10-54. Office bearers were elected with Dr. V. Datt as president and Dr. D. Sharma as general secretary. The branch held 12 meetings during the last year.

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A meeting of the branch was held on 7-11-54 with Dr. V. Datt in the chair. Dr. J. N. Madan a Surgeon of Meerut spoke on "Some Aspects of Plastic Surgery".

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A meeting of the branch was held on 20-11-54 with Dr. V. Datt in the chair. Dr. R. N. Bagby, a prominent practitioner of western U.P. spoke on "Care of Dying".

NAGAPATHINAM BRANCH—A meeting of the branch was held on 4-9-54 with Dr. J. Y. Arthur in the chair. Fourteen members were present. Dr. Adisubramaniam, Director of Public Health, Madras, discussed the various national public health schemes launched by the Government.

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A meeting of the branch was held on 30-10-54 with Dr. J. Y. Arthur in the chair. Thirteen members were present. Dr. (Major) David spoke on "Treatment of Peptic Ulcers."

NAIHATI BRANCH -The annual general meeting of the branch was held on 4-11-54 with Capt. T. Banerjee in the chair. Eleven members were present. Office bearers for 1954-55 were elected with Dr. R. Ghosh as president and Dr. U. N. Guhathakurta as hony. secretary.

PARBAHNI BRANCH—A clinical meeting of the branch was held on 5-12-54, with Dr. S. K. Jatar in the chair. Dr. M. K. Bidarkar read a paper on "Antibiotics in present day Treatment". Two cases of heart disease was presented by Dr. T. K. Seshachery. In response to an appeal for funds for a new medical college and Major Naidu Memorial Library, donations were made by the members.

POONA BRANCH—The 25th annual report of the branch shows that 9 meetings of the managing committee were held. Eight clinical meetings, 2 special meetings, 2 joint meetings and one budget meeting were held. Membership slightly decreased. Five foreign journals and 5 Indian journals were subscribed during the year. Four medical books were purchased. The finaicial position was satisfactory.

PORBANDAR BRANCH—A meeting of the branch was held on 31-10-54 with Dr. H. H. Chavda in the chair. Seventeen members were present. It was decided to form Porbandar Branch of the Tuberculosis Association to be affiliated direct to the Tuberculosis Association of Saurashtra. Dr. R. D. Dave read his paper on Hemicrania and Dr. C. S. Nathwani spoke on Scabies.

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A clinical meeting was held on 21-11-54 with Dr. H. H. Chavda in the chair. Fourteen members were present. Dr. M. M. Nanawati read a paper on "Treatment of Coronary Thrombosis. Dr. D. B. Jhala spoke on Hypertension.

RATNAGIRI BRANCH—The branch was started on 1-4-53. The branch holds monthly meetings and subjects of clinical interest are discussed. The branch was visited by the Hon. Minister of Health of the Bombay State in May 54. He informally discussed with the members the present needs of the public in Ratnagiri District. The Director of Public Health, Bombay State visited the branch in February 1954, when he gave a talk to the members on present problems of Public Health in Bombay State. The annual meeting of the branch was held on 25th September 1954. Dr. S. F. Benjamin was elected president and Dr. S. R. Rajwade as Secretary of the branch for the year 1954-55. The present strength of the members of the branch is fourteen.

SABARMATI BRANCH—Ordinary meetings of the branch were held on 21-8-54, 18-9-54 and 23-10-54 and the usual routine business was transacted.

At a meeting held on 20-11-54 office bearers of the branch were elected with Dr. C. F. Shah as president and Dr. B. N. Jadhav as Secretary.

SAHARANPUR BRANCH—The last meeting of the branch for the year 1953-54 was held on 12-11-54. Office bearers for 1954-55 were elected with Dr. T. R. Swaroop as president and Dr. P. S. Mathur as secretary. During 1953-54, 10 general meetings and 12 clinical meetings were held. Rupees one hundred and eighty were raised from amongst members and sent to the provincial secretary for the flood affected people. The financial position was quite satisfactory.

SALEM BRANCH—A meeting of the branch was held on 30-10-54 with Dr. S. Krishnamoorthy Rao in the chair. Dr. S. Sundararajan, the District Medical Officer, Salem, spoke on Acute Abdomen. The name of the branch was changed into Indian Medical Association Salem Branch. It was decided to maintain *status quo* regarding representatives from the local branches.

SHIMOGA BRANCH—The annual conference of the branch was held on 18-9-54. Sri K. Narayanaswamy, Vice-Chairman, the Mysore Iron and Steel Works in inaugurating it, stressed the importance of industrial medicine and hygiene. The president Sri S. Rao Bapat emphasised the need for starting a medical college at Bhadravathi. Dr. D. P. Jayaram of K. R. Hospital spoke on Leprosy in Kanada. The clinical session opened the next day and interesting papers on medicine, surgery and public health were read. Office bearers were elected with Dr. T. L. N. Pandit as President and Dr. M. Osman Sheriff as Secretary.

SOUTH INDIAN PROVINCIAL BRANCH—A meeting of the Council of the branch was held at Tanjore on 29-8-54, with Dr. K. C. Nambiar in the chair. Twenty-eight members were present. At the outset, the meeting condoled the death of the following members: (1) Dr. K. Rajasekhara Iyer, Salem; (2) Dr. M. Sundaram, Kozhikode; (3) Dr. N. Achuthan, Kozhikode. Dr. Y. P. Vasudevan was elected the president of the branch for 1954-55. Regarding arrears of C. F. C. forfeiting voting power of branches concerned, the house was of opinion that the rule is not legally correct and the hony. secretary was authorised to refer the matter to the president, I. M. A. The secretary was also authorised to give notice of an amendment to the Rules of the I. M. A. parent body regarding last paragraph of Rule No. 55 of Part III, Bylaws of the Association of the I. M. A. Parent Body. Regarding internships and residencies in U.S.A. a sub-committee was formed to consider the applications. It was decided to hold the next provincial conference at Mathurai. The amendments to the rules of the Provincial Branch were accepted and would come into force from 1st October 1954.

SOUTH KANARA BRANCH—A meeting of the branch was held on 3-10-54 to offer condolence at the sad death of Dr. K. R. Kini on 29-9-54. A committee was formed to consider ways and means for perpetuating the memory of Dr. Kini.

SULTANPUR BRANCH—A special meeting of the branch was held on 11-8-54 when the members placed on record their deep sense of sorrow at the sad and sudden death of Dr. L. S. Bhatnagar, an active member of the branch.

SURI BRANCH—Under the auspices of the branch a meeting of the doctors of Suri town was held on 4-11-54 with Dr. S. Bose in the chair, to condole the sad death of Dr. Upendra Nath Ghosh, the president of the branch and a renowned medical practitioner of the town.

TENALI BRANCH—A meeting of the branch was held on 24-10-54 with Maj. K. Vullakki in the chair. A symposium on "Kidney Disorders and Treatment" was introduced and Dr. K. Veeraiah, Capt. K. Venkatrazudu and Dr. C. Krishnaiah participated in it.

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A meeting of the branch was held on 28-11-54 with Major K. Vullakki in the chair. A symposium on Hepatic and Gall Bladder Disorders and Treatment was introduced. Most of the doctors present participated in the discussion.

TIRUCHY BRANCH—An extra-ordinary general meeting was held on 16-10-54 with Dr. T. V. Srinivasan in the chair. The draft rules submitted by the Rules Sub-Committee were considered. Fifty-three members were present. After the consideration of some of the rules, the meeting was postponed.

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The annual meeting of the branch was held on 16-10-54. Dr. T. V. Srinivasan presided. The annual report was adopted. Dr. N. C. Subramanyam was elected president and Dr. S. Venkatesan, Secretary for 1954-55. Dr. J. K. G. Webb of Christian Medical College, Vellore gave a talk on "Convulsive Disorders in Childhood". Dr. N. R. Subramanyam of Government Hd. Qrs. Hospital, spoke on "Hepatic Cirrhosis".

TIRUNELVELI BRANCH—The annual meeting and Silver Jubilee Celebrations of the branch were held on 25-9-54. Seventy members were present. Office bearers for the year 1954-55 were elected with Dr. P. S. Kalyanasundaram as president and Dr. S. Krishnamurthy as secretary. The annual report for the year 1953-54 was adopted. Dr. N. Vaidyanathan delivered a lecture on "The Management of Acute Nephritis and Chronic Nephrosis". Dr. Kanakasabesan also delivered a lecture on common fractures.

TRAVANCORE-COCHIN BRANCH—The annual report of the branch shows a slight fall in membership. The realisation of subscriptions was satisfactory. Four meetings of the Provincial Council were held during the year and important matters were discussed.

VISAKHAPATNAM BRANCH—The annual meeting of the branch was held on 27-11-54. Dr. D. Govindareddy spoke on "Amoebiasis". Office bearers were elected with Dr. M. V. Krishna Rao as president and Dr. A. Bapiraju as Hony. Secretary.

SOME OF THE DOCTORS FOR WHOM POST-GRADUATE TRAINING FACILITIES WERE ARRANGED IN USA BY THE INDIAN MEDICAL ASSOCIATION HAVE PROCEEDED THIS YEAR TO THE DIFFERENT HOSPITALS TO WHICH THEY WERE ASSIGNED. THE PROTOGRAPH WAS TAKEN WHEN THEY BOARDED THE STEAMER.

Sitting left to right : (1) B. L. SEN, (2) G. MALVANKAR, (3) M. J. JABBAR, (4) A. BARTHAKUR—LEADER OF THE GROUP, (5) DOCTOR OF THE SHIP, (6) CAPTAIN OF THE SHIP, (7) CHIEF PURSER OF THE SHIP, (8) A. G. MOTIWALE, (9) V. M. TARKUNDE, (10) V. KURUNDWADKAR, (11) A. K. DAS.
Standing 1st Row : *Left to right*—(1) DR. D. N. MULAY, (2) B. D. PIMPAKAR, (3) LAKSHMAN DAS, (4) K. R. VENKATESALU, (5) TEJBAHADUR SINGH, (6) D. K. MISRA, (7) A. K. CHATTERJI, (8) M. K. N. RAO, (9) S. R. V. REDDY, (10) ANOKHCHAND JAIN, (11) RAJ N. SHARMA, (12) S. P. GUPTA.
Standing 2nd Row : *Left to right*—(1) A. K. SIRCAR, (2) H. C. GOVIL, (3) B. B. KUMAR, (4) K. V. WADHWANI, (5) C. M. JOSEPH, (6) B. K. GIRI, (7) S. D. PAUL, (8) P. MITRA, (9) P. K. ADHIKARI, (10) N. K. MAJUMDAR, (11) K. CHATTERJI.

VI ASSAM MEDICAL CONFERENCE, SHILLONG

The Sixth Assam Medical Conference will be held at Shillong in the last week of February, 1955. Arrangements are being made to organise an exhibition and to publish a Souvenir on the occasion. For further information, please contact the Hony. Secretary, I.M.A., Shillong Branch, Reid Chest Hospital, P.O. Shillong, Assam.

XIV BENGAL PROVINCIAL MEDICAL CONFERENCE, CALCUTTA

The Fourteenth Bengal Provincial Medical Conference will be held at Calcutta in the 3rd week of February 1955. The exact date will be announced later. For further information please write to the Hony. Secretary, Calcutta Branch, I.M.A., 67, Dharamtala Street, Calcutta-13.

VIII GUJARAT & SAURASHTRA PROVINCIAL MEDICAL CONFERENCE, PATAN

"Under the auspices of Gujarat and Saurashtra Provincial Branch, I.M.A., the 8th annual Conference of medical men of Gujarat and Saurashtra will be held at PATAN (ancient capital of Gujarat) during April, 1955. On this occasion there will be an Exhibition of Pharmaceutical Products of our country. Exact dates and other programme will be announced later. For further details please write to Dr. B. G. Adhvaryoo—PATAN, (North Gujarat)."

VI MADHYA PRADESH PROVINCIAL MEDICAL CONFERENCE, AKOLA

The Sixth M. P. Provincial Medical Conference will be held at Akola on the 23rd, 24th and 25th of January, 1955. The conference will be inaugurated by Dr. Panjabrao Deshmukh, Union Minister for Agriculture.

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Medical Digest, Vol. 22, No. 9, Sept. 1954

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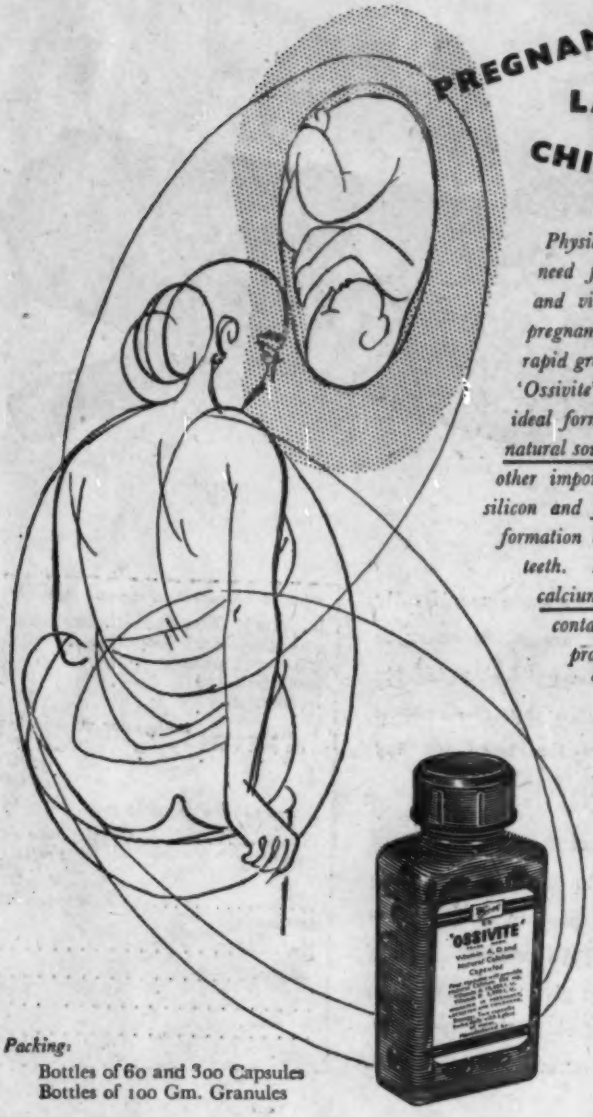

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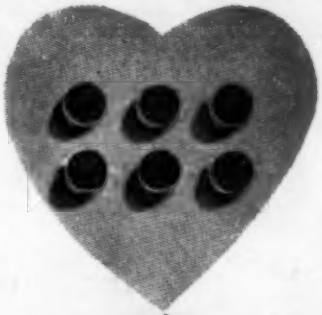

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Goldman, B. R., & Steigmann, F.: *J. Lab. & Clin. Med.* 40:803, 1952.

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